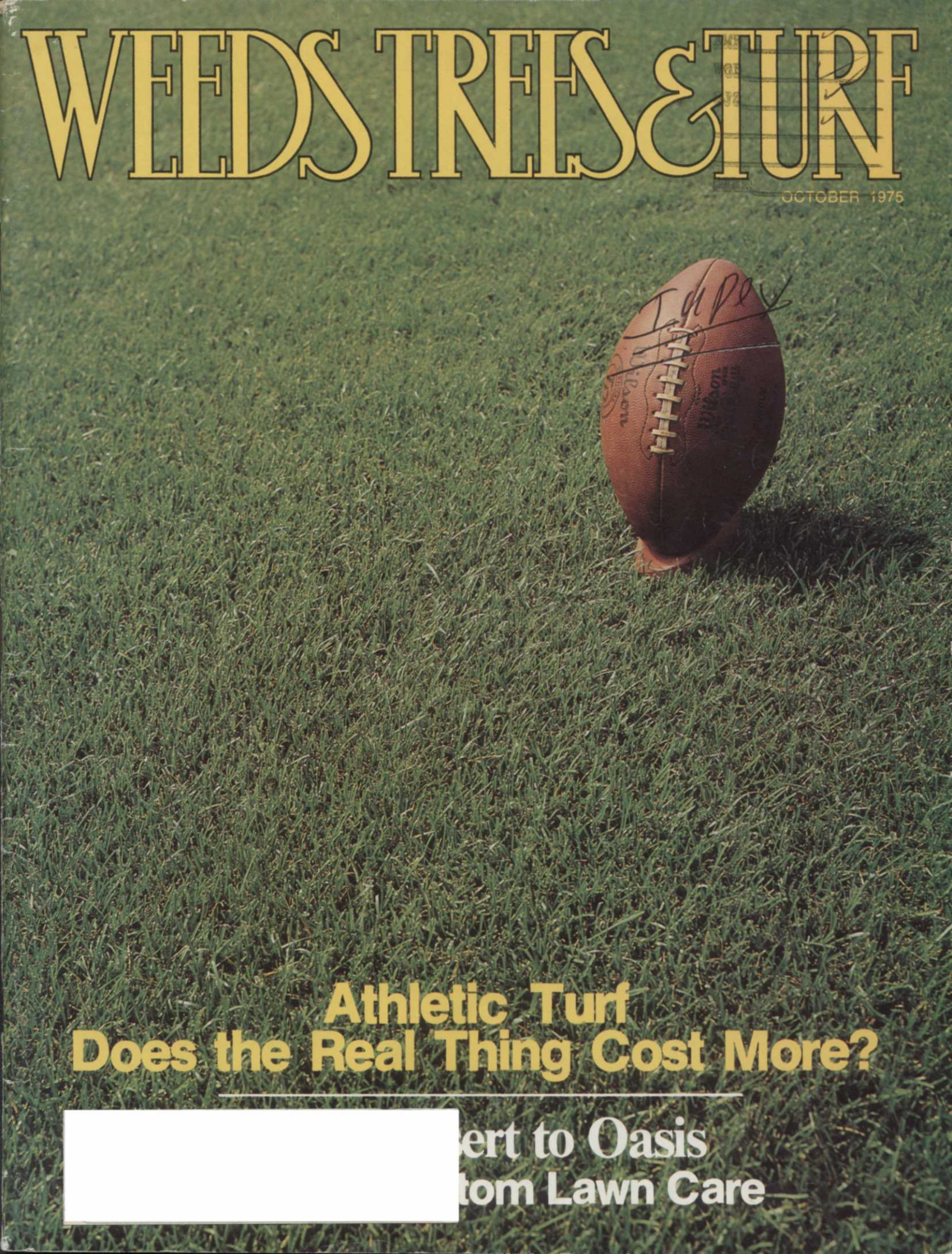
WEEDS TREES & TURF

OCTOBER 1975



Athletic Turf Does the Real Thing Cost More?

ert to Oasis

tom Lawn Care

Pennfine Perennial Ryegrass.

If it's got a weakness, nobody's found it. But we have heard about some new strengths.

The Pennfine story gets better as it goes along.

Four years ago, the agronomists at Pennsylvania State University finished their work on Pennfine. And the professional turf community put this remarkable fine-leafed perennial ryegrass to work on golf courses, athletic fields, sod farms, parks, cemeteries and public grounds across the country.

Clean-cutting Pennfine *Other fine-leafed ryegrasses*

The ultimate test.

Now, after thousands of grounds maintenance pros have used Pennfine, nobody's reported a real weakness. All the characteristics the Penn State agronomists selected for—unsurpassed mowability, excellent disease resistance, exceptional decumbency, persistence under diverse management conditions, fine texture and compatibility with Kentucky Bluegrass — have proven out in the real world. That's the ultimate test.

Dr. Joe Duich of Penn State inspecting a new application for Pennfine: Independence National Historical Park, Philadelphia.

In fact, Pennfine has performed even better in some areas than anticipated. It's proven to be more tolerant to both shade and heat. It's shown excellent rust resistance on the West Coast. And, although Pennfine showed good to excellent disease tolerance in university trials, its disease tolerance appears to be even stronger in actual use.

Pennfine production fields in the Pacific Northwest where a major effort is underway to meet growing demand for seed.

Increased production.

From the very beginning, there's been only one problem with Pennfine: not enough seed to meet demand. And that problem is just about solved with substantially increased production. We can't make you a flat promise. But, if you order fairly soon, you should be able to get Pennfine seed in the quantity you want.

On the other hand, maybe you're still not convinced. In that case, we'll send you a test kit with enough Pennfine seed for you to develop a 100 sq. ft. test plot. And you can try to find a weakness on your own turf.

Either way, whether you seed Pennfine this year or just test it, we think you'll be impressed by the results.

WTT-10

☐ Let me know how I can order Pennfine Perennial Ryegrass.

☐ I'm still not convinced. Send me a Pennfine Test Kit.

Pennfine PERENNIAL RYEGRASS

Name_____

Title_____

Club or Company_____

Address_____

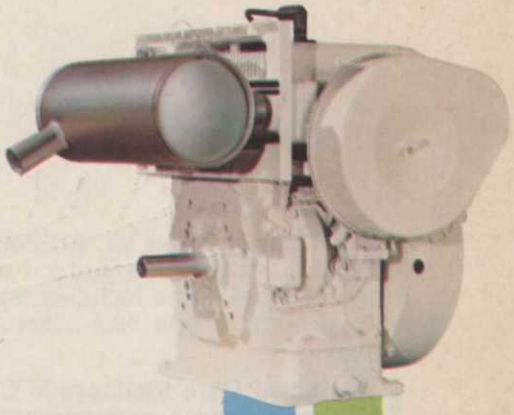
City_____ State_____ Zip_____

Please Note: The test kit offer is restricted to turf professionals, people whose livelihood depends on the establishment and maintenance of quality turf.

Mail to: Pennfine Perennial Ryegrass, P.O. Box 923, Minneapolis, Mn 55440.

Kohler 'Quiet plus' engines.

Designed to make equipment quieter.



Kohler introduces a full line of "Quiet-plus" engines, both one- and two-cylinder models. Soft-spoken, air-cooled, cast iron engines that deliver big Kohler performance *plus* a dramatic noise reduction system . . . efficient mufflers, quiet-breathing carburetors, shrouded cooling. And designed to run hard and cool within a *closed* engine compartment—requiring only one intake and one exhaust duct. All of which results in a substantial reduction in dbA*

Until now there was nothing but a lot of noise about noise. Now there are "Quiet-plus" engines. Only from Kohler.

. . . no wonder 7 out of 10 major manufacturers of garden tractors specify Kohler 4-cycle engines.

KOHLER CO., KOHLER, WI 53044

*Test data available on request.

WEEDS TREES & TURF®

October 1975, Vol. 14, No. 10

11 **Natural Grass vs. Artificial Turf** — It's Fall. All eyes are focused on this season's gridiron action and planning next year's strategy. If one of those plans includes replacing your natural grass fields with an artificial surface, you had better take a look at these actual yearly cost comparisons.

14 **Lawn Care Business Is Changing . . . Are You?** — More custom lawn service companies are springing-up almost overnight. And the stiff competition is favoring the professional. Maintaining your market share includes a lot more than just being able to perform a satisfactory job.

20 **Reducing Maintenance Costs, And Keeping the Quality Up** — Golf play activity on most courses has increased tremendously. It requires an even tighter maintenance program to keep up with the increased play and remain within an acceptable budget. One superintendent, Charles Santoianni, reviews his operation and tells how he reduces costs and increases the quality of his course.

24 **Greener by the Year** — Once sunny Southern California's Coachella Valley's only inhabitants were coyotes, jackrabbits, and the like. But underground irrigation installations have brought green to Coachella. Arnold Palmer's new 125-acre Ironwood Country Club is just one example of a green, ultra-modern layout in this once-arid region.

39 **Do Anti-Transpirants Increase Transplant Success?** — Trees undergo large water deficits even if they're not moved, says T. T. Kozlowski. Once the trees are moved, however, chances of drying out and death become very real. Kozlowski examines two forms of anti-transpirants and their effects on water loss in trees.

Editorial 8
Government News • Business 10
Guest Editorial 14
Industry News and Newsmakers ... 31
Commercial Sod Industry 36
Meeting Dates 41
New Products 42
People on the Move 43
Ad Index/Classifieds 48
Trimmings 49

Copyright© 1975 by The Harvest Publishing Company

Member, American Business Press, Business Publications Audit ABP BPA

Single Copy Price: $1.00 for current and all back issues. Foreign $1.50. Subscription Rates: WEEDS TREES AND TURF is mailed free, within the U.S. and possessions and Canada, to qualified persons engaged in the vegetation care industry and related fields in controlled circulation categories. Non-qualified subscriptions in the U.S. and Canada are $10.00 per year; other countries, $12.00 per year. Controlled circulation postage paid at Cleveland, Ohio 44101.

THE COVER — Now that players and coaches have begun demanding natural grass over artificial playing surfaces, it's time to take a look at actual cost figures. The ball is teed-up and the action is ready to begin. You decide which surface is best for your team.

PUBLISHED MONTHLY BY
THE HARVEST PUBLISHING CO.
9800 Detroit Ave.
Cleveland, Ohio 44102
(216) 651-5500

HUGH CHRONISTER
PRESIDENT

ARTHUR V. EDWARDS
PUBLISHER

LEO NIST
SENIOR VICE PRESIDENT

WILLIAM CUNNINGHAM
VICE PRESIDENT, TREASURER

EDITORIAL

DONALD D. MILLER
EDITORIAL DIRECTOR

ROGER E. YOUNT
ASSOCIATE EDITOR

CIRCULATION

GILBERT HUNTER
VICE PRESIDENT CIRCULATION

DONALD D. LANGLEY
DIRECTOR OF CIRCULATION

PRODUCTION

PAUL BALTIMORE
DIRECTOR OF OPERATIONS

DARRELL GILBERT
ADVERTISING PRODUCTION MANAGER
9800 Detroit Ave.
Cleveland, Ohio 44102
(216) 651-5500

ADVERTISING

HEADQUARTERS:
9800 Detroit Ave.
Cleveland, Ohio 44102
(216) 651-5500

JEAN NEUENDORF
EXECUTIVE ASSISTANT

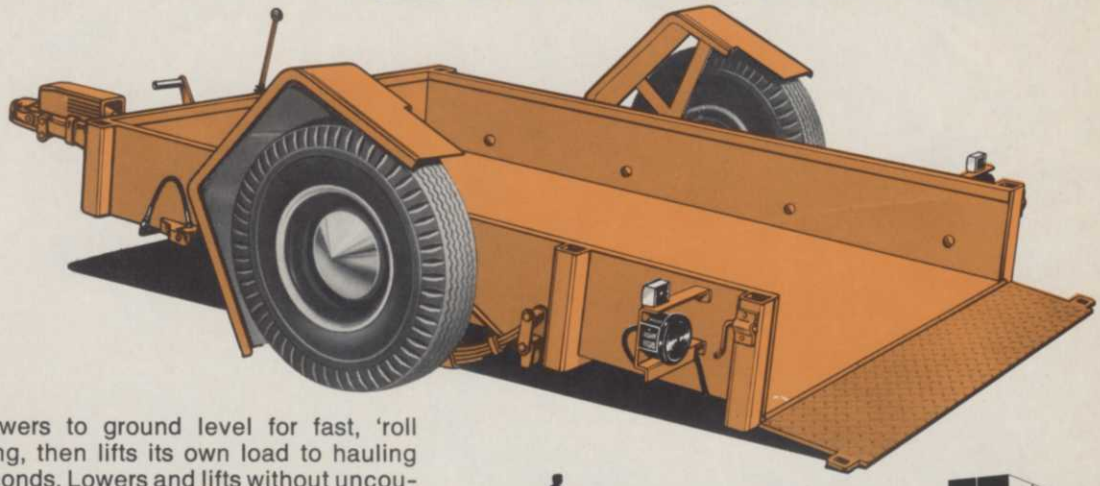
DOROTHY LOWE
CLASSIFIED ADVERTISING MANAGER

RICHARD H. SWANK
REGIONAL MANAGER
9800 Detroit Ave.
Cleveland, Ohio 44102
(216) 651-5500

RUSSELL B. BANDY
REGIONAL MANAGER
757 Third Avenue
New York, N.Y. 10017
(212) 421-1350

HITCH UP

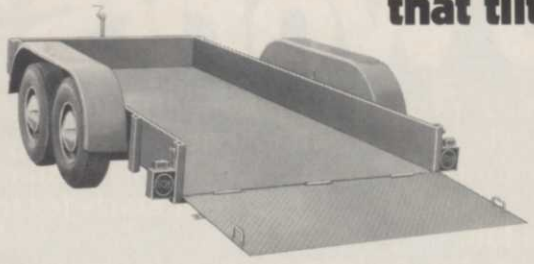
TRAILEVATOR the hydraulic elevating trailer that lifts its own load in seconds



Trailevator lowers to ground level for fast, 'roll aboard' loading, then lifts its own load to hauling position in seconds. Lowers and lifts without uncoupling from towing vehicle. Saves time, saves money. Four models, two capacities: 3000 lbs. and 2000 lbs. Bed sizes up to 5'-10" x 10'.

△ Write in #101 △

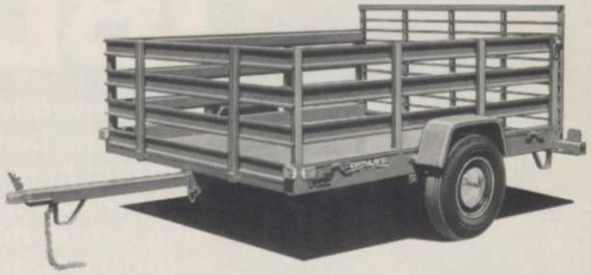
TILTSTER the low bed trailer that tilts



Drop axle tilt type trailer handles loads up to 5000 lbs. Easy one-man operation. Tailgate serves as self-adjusting access ramp, provides smooth, gradual incline for fast ground level loading. Bed returns to hauling position when loaded; size: 5'-10" x 12'.

△ Write in #102 △

NORTHLAND utility trailers



Strong, durable, all-purpose utility trailer with unitized steel bed construction. Body tilts to ground level for fast, easy loading. Steel side racks and end gate with positive locking latch available. Three models; capacities to 2000 lbs.; bed sizes to 6' x 8'.

△ Write in #103 △

Single Axle Tiltster

Capacities to 3000 lbs.

△ Write in #104 △

Low Profile Utility Trailer

Capacities to 1500 lbs.

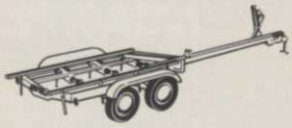
△ Write in #105 △

Northland R.V. Trailers

Snowmobiles, Cycles, etc.

△ Write in #106 △

Northland Boat Trailers



Capacities to 4000 lbs.
12 to 21 ft. boats.

△ Write in #107 △

MagLiner®

Magline Inc., Pinconning, Michigan 48650
P.O. Box 2710 Tel: (517) 879-2411

For ad on following page Circle 127 on free information card

IBDU works 'til

Most slow release fertilizers depend on temperature. The hotter it gets, the faster they release. And when it gets cold, they stop.

In fact they start slowing down as bacterial activity slackens—when the temperature falls below 80°F. Winter starts for them long before the leaves fall.

IBDU is activated by water. As long as there is unfrozen moisture in the soil, IBDU is releasing nitrogen. At 40°F. the

LOCAL PAR EX DISTRIBUTORS

Capitol Nursery Sup., Inc.
Phoenix, Ariz. 85005
(602/272-5508)

Swift Agri. Chem. Corp.
Los Angeles, Cal. 90023
(213/264-5800)

Foster-Gardner, Inc.
Santa Ana, Cal. 92706
(714/542-6741)

Foster-Gardner, Inc.
Coachella, Cal. 92236
(714/398-6151)

Agri-Turf Supplies
Santa Barbara, Cal. 93101
(805/963-3691)

Northern Cal. Fert. Co.
San Jose, Cal.
(408/292-7957)

Abate-A-Weed
Bakersfield, Cal. 93308
(805/598-0616)

Robinson Fertilizer Co.
Orange, Cal. 92666
(714/538-3575)

Wilbur-Ellis Company
Chula Vista, Cal. 92012
(714/422-5321)

Agri-Chem, Inc.
Brush, Col. 80723
(303/842-5511)

Avon Cider Mill
Avon, Conn. 06001
(203/677-0343)

Swift Agri. Chem. Corp.
Winter Haven, Fla.
(813/293-3147)

McMullen Feed Store
Clearwater, Fla. 33516
(813/446-5961)

Swift Agri. Chem. Corp.
Pompano Beach, Fla.
(305/772-5550)

Gulfshore Turf Sup., Inc.
Pensacola, Fla. 32504
(904/968-2183)

Swift Agri. Chem. Corp.
Atlanta, Ga.
(404/432-5582)

Lawn and Turf, Inc.
Conyers, Ga. 30207
(404/483-4743)

Swift Agri. Chem. Corp.
East St. Louis, Ill. 62201
(618/271-5650)

Turf Products, Ltd.
Wheaton, Ill. 60187
(312/688-5537)

Turf Mgmt. Supplies
Rockton, Ill. 61072
(815/624-7578)

Paarlberg Chemical
South Holland, Ill. 62467
(312/474-3086)

Leon Short & Sons, Inc.
East Peoria, Ill. 61611
(309/694-1493)

Olsen Distributing Co.
Barrington, Ill. 60010
(312/381-9333)

Professional Turf Spec.
Bloomington, Ill. 61701
(309/829-5031)

Vaughan's Seed Company
Div. of the Vaughan-
Jacklin Corporation
Downers Grove, Ill. 60515
(312/969-6300)

Indiana Seed Co., Inc.
Noblesville, Ind. 46060
(317/773-5813)

Deisch-Benham, Inc.
D/B/A Desco Chemical
Nappanee, Ind. 46550
(219/773-7781)

Chemi-Trol Chemical Co.
Indianapolis, Ind. 46225
(317/634-7963)

Seedkem, Inc.
Evansville, Ind. 47708
(812/424-2401)

Tri-State Toro Company
Davenport, Ia. 52802
(319/326-4416)

Champion Turf Equip.
Wichita, Kan. 67209
(316/943-0283)

Swift Agri. Chem. Corp.
Glen Burnie, Md. 21061
(301/760-5927)

Cornell Chem. & Eq. Co.
Baltimore, Md. 21227
(301/247-1525)

Vaughan's Seed Company
Div. of the Vaughan-
Jacklin Corporation
Landover, Md. 20785
(301/322-8800)

R. F. Morse & Son Co.
Wareham, Mass. 02571
(617/295-1553)

Ferguson's Lawn Eq. Co.
Traverse City, Mich. 49684
(616/946-2440)

L & E Chemical, Inc.
Royal Oak, Mich. 48067
(313/398-3636)

J. J. Dill Company
Kalamazoo, Mich. 49005
(616/349-7755)

earth freezes over.

release rate for IBDU is only 20% slower than at 80°F. So your turf gets a steady meal whether it's hot or cold.

When the winter freeze sets in, your turf will still be thick and green. And the IBDU will be ready to start feeding at the first thaw of spring.

IBDU. It works longer to make your grass greener.

Turf Supply Company
St. Paul, Minn. 55121
(612/454-3106)

Swift Agri. Chem. Corp.
Jackson, Miss.
(601/982-2010)

Champion Turf Eq., Inc.
Kansas City, Mo. 64114
(816/333-8000)

Fox Vehicles
St. Louis, Mo. 63112
(314/726-3260)

Big Bear Equip., Inc.
Omaha, Neb. 68127
(402/331-0200)

Southern Hardware Co.
Las Vegas, Nev. 89106
(702/384-8779)

The Terre Company
Saddle Brook, N.J.
(201/843-6655)

Vaughan's Seed Company
Div. of the Vaughan-Jacklin Corporation
Bound Brook, N.J. 08805
(201/356-4200)

Wagner Seed Co., Inc.
Farmingdale, N.Y. 11735
(516/293-2920)

Eastern Turf Equipment
Fayetteville, N.C. 29301
(919/384-0179)

Swift Agri. Chem. Corp.
Wilmington, N.C.
(919/371-2217)

Sidney L. Dryfoos Co.
Cleveland, Ohio 44146
(216/439-4363)

Van Atta Seed & Imp. Co.
Cincinnati, Ohio 45225
(513/541-2051)

Wait Mfg. & Marine Sales
Tulsa, Okla. 74101
(918/584-3334)

Lawn & Golf Sup. Co.
Phoenixville, Pa. 19460
(215/933-5801)

Allen's Seed Store, Inc.
Slocum, R.I. 02877
(401/294-2722)

Bell Oil Company
N. Myrtle Bch, S.C. 29582
(803/249-2616)

Swift Agri. Chem. Corp.
Columbia, S.C. 29250
(803/799-3467)

Central So. Turf Dist., Inc.
Nashville, Tenn. 37211
(615/832-7725)

Swift Agri. Chem. Corp.
Houston, Tex.
(713/864-4496)

Swift Agri. Chem. Corp.
Chesapeake, Va. 23324
(804/545-8445)

Swift Agri. Chem. Corp.
Vancouver, Wash.
(503/285-0493)

Turf Mgmt. Supplies
Sun Prairie, Wis. 53590
(608/837-5598)

Reinders Brothers, Inc.
Elm Grove, Wis. 53122
(414/786-3300)

Please send me more information about IBDU

Name_____

Address_____

City_____ State_____ Zip_____

par ex®

PROFESSIONAL PRODUCTS

Swift Agricultural Chemicals Corporation
An Estech Company
111 West Jackson Blvd.
Chicago, Illinois 60604

WTT-10

Editorial

Many businessmen in the green industry have already started budget planning for another year. Others will be starting within the next several months.

Unfortunately, far too many managers feel that budget time is the most disagreeable part of the year — the bookwork, the estimating, the reflecting, the heavy thinking. When they feel this way managers are tempted to hurry through what might just be the most important job they have all year.

We feel a basic foundation plan is critical in every business — an overview philosophy . . . a base . . . a grouping of long-term goals. If you will . . . every business needs a dream.

A common error some managers make is to establish next year's budget based on last year's budget plus inflation. Next year is a new year. Planning should take into account experiences of past years, of course, but the failures and achievements in last year's operation should not dictate the new plan.

No, a budget is a plan of operation — a plan to work within guidelines to meet goals. These goals dictate the priorities.

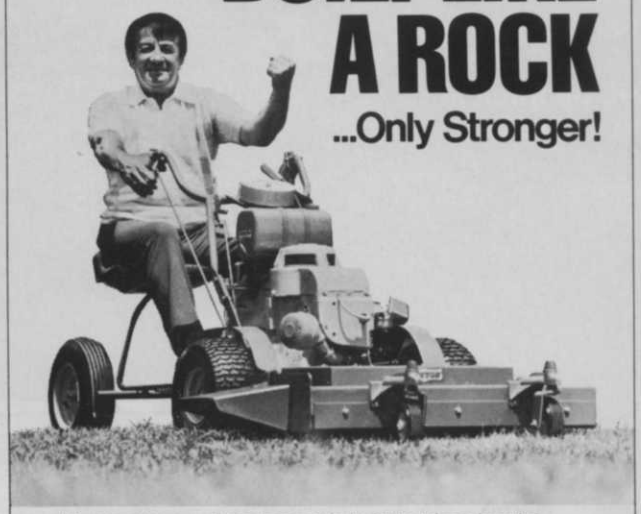
What we're saying is that planning is creative . . . not automatic. It's dreaming and estimating — not adding and subtracting.

To start with next year's plan, we recommend a blank sheet of paper and a pencil . . . not last year's budget figures. On the paper, list the things you would like to see accomplished next year — regardless of the cost. Suggest continuation of successful programs and list possible new area to investigate. Be sure to include as many staff people in this creative planning session as possible.

The next step is to determine the value and importance of the list of goals. This involves priorities, costs and finally . . . the experience of past years.

When the budget is finished for next year it will be a plan that leads to accomplishments — not just a way to spend money more efficiently than last year.

BUILT LIKE A ROCK
...Only Stronger!



"Bunton lawn-turf equipment is built to take a beatin'... it's tough! Like this self-propelled riding mower. Equipped with a cushiony seat and power steering, it can turn on a dime! It can even go over a pile of rocks and still come out cuttin'!" So listen to Rocky Graziano...send for more information today...with Bunton, you can't lose! Available from 8-inch to 52-inch cut.

BUNTON

BUNTON CO. 4303 Poplar Level Road, Louisville, Kentucky 40213, U.S.A. Phone 502/459-3810 Telex 204-340

Circle 124 on free information card

LIQUI-SYSTEM™ horticultural service machine. A new specialized tool for feeding, spraying and treating plants, trees and lawns. Protected storage provides varied supplies for a 2000 gallon day's work.

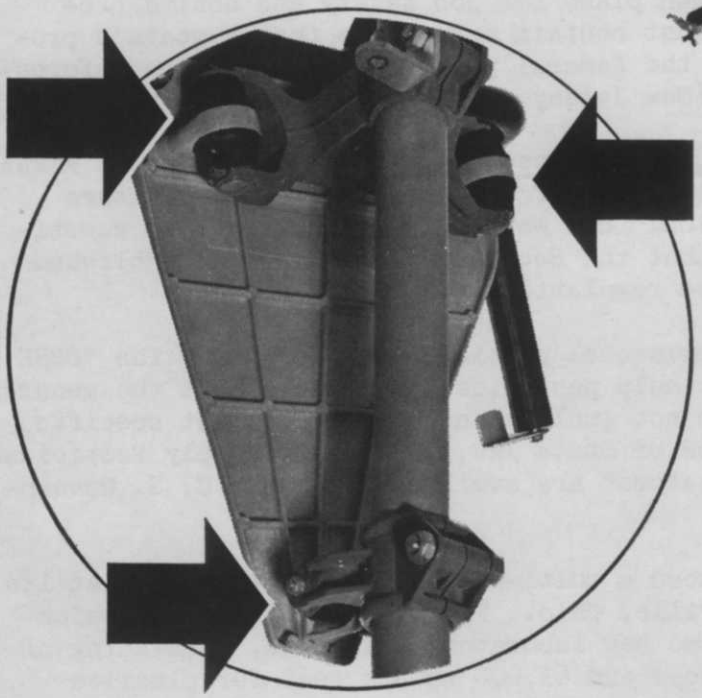
This versatile machine sprays at 800 psi, fertilizes with standard corrosive fertilizers and pumps interchangeably from its ten formula tanks. The patented two pump injector and control system reduces by five the tank sizes and multiples by five the speed of refilling.

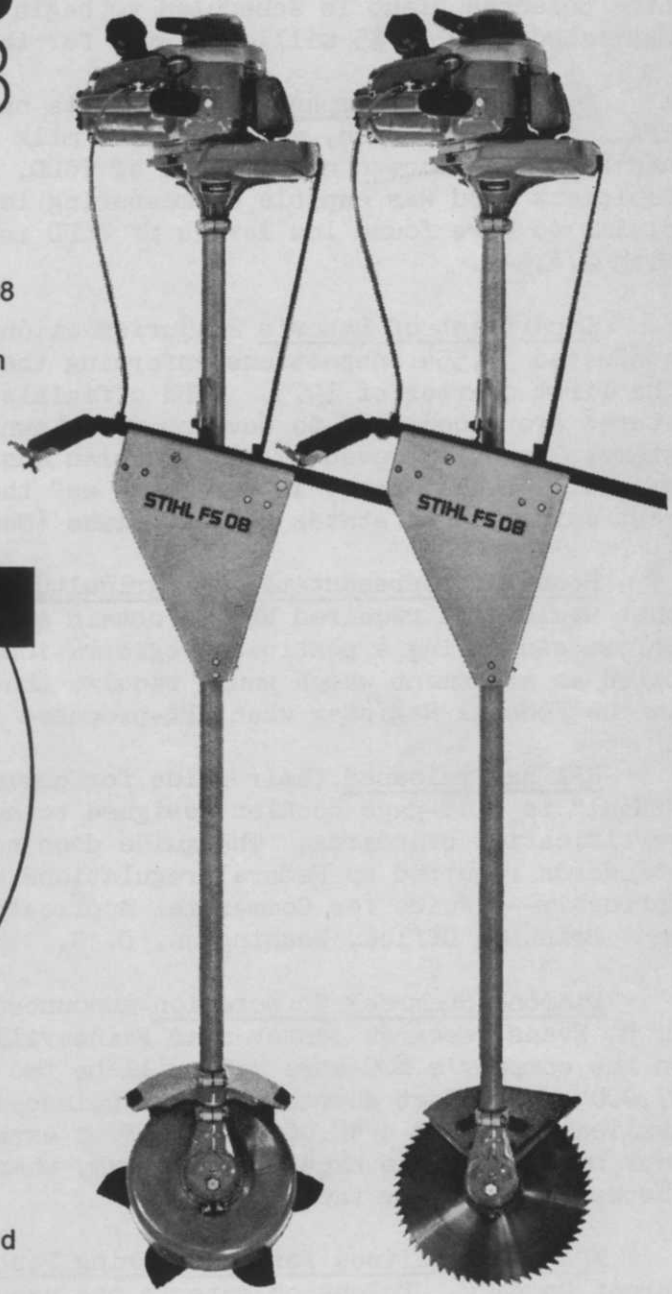
Distributed by
Hill's Liqui-System
Victoria, Texas 77901

Circle 133 on free information card

STIHL 08 S
STIHL FS 08

A perfect pair: The versatile STIHL 08S big power chain saw and the handy new, lightweight STIHL FS - 08 Brush Cutter. The same high performance engine powers them both. The FS - 08 Brush Cutter does a real professional job in tough weeds, stubborn shrubs and small trees when using either the blade with rotating knives or





circular saw. **This brush cutter features STIHL's famous AV anti-vibration system that absorbs fatiguing engine vibrations.** Lets you cut longer and easier with less effort.

Ask your rental friends or your nearest dealer about STIHL'S better performance, lower maintenance & down-time and proven earning capacity.

STIHL®

STIHL Incorporated

5898 Thurston Avenue, Virginia Beach, Virginia 23455

Circle 161 on free information card

Government News·Business

Rohm and Haas Company plans to begin construction of a pilot plant to expand facilities for new product exploration and development. Construction of their new Life Sciences plant is scheduled to begin in 1975 and will be completed in 1977. Estimated cost is $5 million. Site for the plant has not yet been determined.

Dow Chemical Company research data on 2,4,5-T is currently being reviewed by EPA. Samples of fish, mud and human milk taken from two areas where the pesticide had been used showed no evidence of TCDD, says Dow. Dow officials said that the equipment used was capable of measuring levels below 10 parts per trillion. EPA claims to have found low levels of TCDD in samples from beef-grazed land treated with 2,4,5-T.

Department of Labor's 23 jurisdictions with approved safety and health plans conducted 39,554 inspections enforcing their own job safety and health laws during the first quarter of 1975. OSHA officials said that under federal OSHA of 1970, states are encouraged to develop their own plans for job safety and health programs. To be approved by OSHA, a plan must contain assurances that a state's program will be "at least as effective as" the federal program. OSHA retains enforcement authority in states without plans (New Jersey, New York and Wisconsin).

House of Representatives' Agriculture Committee defeated an amendment to FIFRA that would have required EPA to obtain approval of the Secretary of Agriculture before cancelling a pesticide registration. But wait. The same committee substituted an amendment which would require that the Secretary's comments be published in the Federal Register when EPA-proposed regulations are published.

EPA has released their guide for commercial pesticide applicators. The "CORE Manual" is a 48-page booklet designed to help pesticide applicators meet the general certification standards. The guide does not include information to meet specific standards required by Federal regulations or State law. Copies of "Apply Pesticides Correctly--A Guide for Commercial Applicators" are available from the U. S. Government Printing Office, Washington, D. C.

Diamond Shamrock Corporation announced a multi-million dollar expansion at its T. R. Evans research center near Painesville, Ohio. First phase of the expansion on the company's 800-acre site will be two new laboratory buildings, consisting of 67,000 square feet devoted to life sciences and 61,000 square feet for plastics applications, and a 48,000 square foot expansion of the existing process development building. The expansion program, when completed in 1976, will more than double the research center facilities.

EPA's "Guidelines for Registering Pesticides" has come under fire from the DuPont Company. DuPont objects to the use of mice as a valid test animal for pesticide cancer evaluation. DuPont says that rats and dogs are more valid test animals in determining whether pesticides may or may not cause cancer in humans.

Hawaii Irrigation Supply Company has been named the exclusive distributor in the Hawaiian Islands for Weather-matic's lawn and garden and heavy turf irrigation lines.

Servis machines are built with one simple idea in mind.

To be the best.

If you're familiar with the name, Servis, you know that we've been manufacturing rotary mowers, cutters and shredders, box scrapers, landscape rakes and rear-mounted blades for a long time. Since 1946 to be exact.

Interestingly enough, some of the first equipment we put in the field is still being used today. That's dependability.

And that kind of dependability is no accident. Servis equipment is designed to do specific jobs. And to do them better than anything else. It's also designed to last.

Take construction. Servis frameworks are unibody constructed to provide extra frame strength. And the high-stress areas are reinforced with heavy gauge tubing.

In addition, all of our rotary cutters feature safety devices to protect the tractor and cutter drive trains.

The gears and gear box shafts used on our machines are precision machined to increase strength and durability, and reduce noise.

And Servis is one of the few lines of equipment that offers you an option of blade carriers on rotary cutters. The Cyclone (dish-pan type) for cutting up to 3" brush. And the Gyro ("A" frame type) for cutting heavy 4" brush.

Of course, this is only part of our story. The point is that Servis builds a complete line of equipment with one simple idea in mind. To be the best.

So whether you've got 4" brush to cut, stalks to shred, ditches to dig, soil to move or land to level, see your Servis dealer. He's got the equipment you need.

For more information about the Servis line, contact your nearest authorized Servis dealer, or write: Austin Products, Inc., Dept. 2-75 S, P.O. Box 1590, Dallas, Texas 75221.

SERVIS

We build equipment the way we do because you wouldn't settle for less.

Guest Editorial

Lawn Care Business is Changing . . . Are You?

By STANLEY L. WEBER, Executive Vice President, Lawn Maker, Inc.

IT IS generally recognized that the custom lawn service segment of the Green Industry has grown very rapidly over the past decade and that this expansion will probably continue briskly in the foreseeable future.

As WEEDS TREES & TURF suggested in a recent editorial (July, 1975), homeowners have been especially receptive to the idea of paying a professional to apply the required seed, chemicals and fertilizer to their lawns as well as aerating and dethatching.

The development of specialized multi-function power equipment in the early 1960's, along with the adaption of spray techniques, made it possible for the properly equipped professional to offer an attractively priced, comprehensive application service which included all materials and labor for about what the homeowner would pay if he bought or rented the materials and necessary equipment and did the work himself. In addition to doing the job very economically, the conscientious professional was also able to get better results than the do-it-yourselfer.

Along with the advent of time and labor saving "one pass over the lawn" equipment, which made this concept possible and profitable, the other key to the explosive growth of the custom lawn service market was the use of modern, hard-hitting selling and merchandising techniques that made the homeowner aware of the value that awaited him and tempted him to try it.

Unfortunately, the professional was very slow to recognize the potential impact of this combination on the largely untapped and highly lucrative do-it-yourself market. Equally sad is the fact that, even today, a majority of professionals still view low-cost custom application as a passing fad, hoping it will eventually go away. It hasn't . . . and it won't . . . and by ignoring a major marketing change that was taking place right before his eyes the professional has already forfeited a large part of a market segment that he should have been enjoying.

Back around 1960, it was the established lawn maintenance or landscaping operator who initially disparaged the idea that the average homeowner would ever simply buy an economical custom application program for his lawn, without the labor-intensive, time-consuming mowing, trimming and clean-ups that he thought was indispensable to attract and hold a customer.

The developers of the early multi-function equipment first offered it to the logical users, the professionals already active in the industry. They were turned down cold, because the equipment and the concept represented radical change from the time-honored (but less profitable) way of doing business. The developers tried mightily to change these long established habit patterns, and they failed.

Frustrated in their attempts to introduce their equipment to the professionals, the manufacturers went outside the industry and franchised it to laymen who were simply seeking new and promising business opportunities.

Because virtually all of these early custom applicators were recent laymen, without preconceptions or rigid opinions about marketing, they approached the subject openmindedly as businessmen. Their consumer literature; flyers, mailers, instruction sheets were professionally created, bright, lively, informative, attention getting and, above all, persuasive.

They gave away premiums and souvenirs. They used doorknob hangers and posters. Their vehicles and equipment were attractively and professionally lettered and decorated. Every piece of paper they used in dealing with the public, including the service agreement signed by the customer, was designed to project a modern, efficient image.

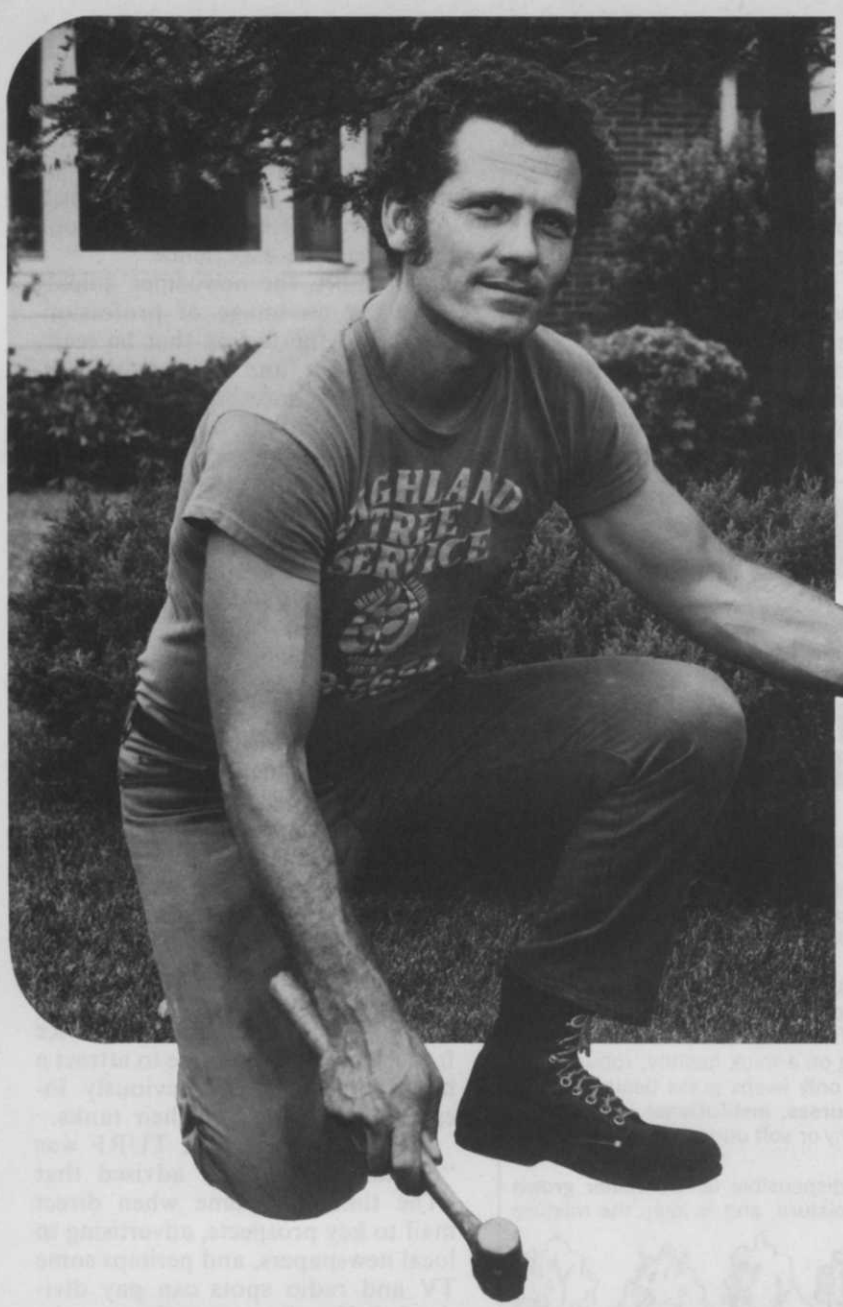
The customer received clear, informative printed matter explaining exactly what program of applications he was purchasing, approximately when they would be made, their purpose and the precise cost. Misunderstandings were minimized in advance. The customer was advised clearly and forcefully of the results he could reasonably expect and, most importantly, what he should not expect. Special literature clearly advised him about the possible effects of unusual weather conditions and the need for proper watering practices. How many professionals have ever really taken the trouble to do this?

Above all, the new custom applicators advertised consistently, using newspapers, radio, television, direct mail, inserts and billboards that told their story in a lively, provocative way. A fair estimate would be that their annual advertising budgets at the start equalled at least 10 percent of their gross revenues and probably remain at that general level. Whether by accident or design, they succeeded in convincing the public that they were NOT landscapers or mowers of grass, but lawn application **specialists.**

It is ironic that their success stemmed largely from disassociating themselves from the old line professionals who, logically, should have been the users and beneficiaries of the new equipment and marketing concept in the first place.

Perhaps it was because they were

(continued)



"When work slacks off in the fall, we get busy with JOBE'S Tree and Shrub Spikes."

Werner Reichenback
Highland Tree Service,
Highland Heights, Ohio

"I think it's smart two ways to feed trees in the fall. It's good fill-in work for my crew, and it's the best time for the trees. Roots grow in late fall and early winter. That's the time to provide nourishment to help trees survive rough winter weather and have a reservoir of plant food for good growth next spring.

"In just 10 minutes, I put 8 Jobe's Spikes around the tree above. It's a green ash, 15 years old. With Jobe's there are no heavy bags to lift, no electric wires to tangle and no drills to break.
"I've been in the tree and landscaping business in the Cleveland area for 20 years. You've got to please your customers to stay in business that long. Jobe's Spikes get the results your customers want."

Jobe's Tree and Shrub Spikes used in the fall help overcome weakness brought on by summer heat, lack of moisture, ravages of insects and battering winds. They help winterize trees and give them a faster start next spring.

Each spike is a pre-measured amount of plant food you can put close to the root zone where trees need it . . . without drilling. All you do is drive them into the ground, and rainwater does the rest.

Call your local jobber or distributor or order direct. $30 per case (105 spikes) prepaid. 15 or more cases, $25 per case. Jobe's Tree and Shrub Spikes have been fully tested at Purdue University. Write for the complete report.

Jobe's
TREE FOOD SPIKES
— THE EASY METHOD
FOR PROFESSIONAL TREE CARE
International Spike, Inc.
462 East High Street, Lexington, Kentucky 40508

unencumbered by the past that the new custom applicators paid careful attention to basic marketing details and elementary merchandising logistics. They kept their current and old customer lists up to date and frequently sent informative "Public Service" mailings to both groups. When they signed up new customers, they sent mailings to nearby neighbors, suggesting that the latter observe the results of their applications. This helped keep renewal rates high, salvaged "drop outs" and stimulated referrals to other prospects. The name of the game was "volume," and they understood how to achieve it.

The new applicators somehow found the time to check back on each customer's lawn between programmed services, leaving individualized comment forms advising the homeowner of the lawn's progress and condition, doing "touch-ups" and suggesting better watering and mowing procedures, if needed. What they lacked initially in turf care experience, they more than made up for with business sense. And droves of new customers soon gave them the experience.

In short, the newcomer quickly projected an image of professionalism and the feeling that he really cared about and valued his customer. By educating his customer about the pitfalls and vagaries of residential lawn care, he was able to take full credit for the results he did achieve without raising the homeowner's level of expectation beyond what he could produce.

Amazingly, despite the tremendous past progress and obviously promising future of custom lawn application, and the substantial inroads it has already made into the business of many traditional residential landscapers and lawn maintenance people, most of the entrants into the field continue to be non-professionals.

The records of Lawn Maker, Inc. show that over 65% of sales of multi-function power lawn combines over the past two years were to non-professionals. From all indications, the automated lawn service franchisors also continue to attract a high percentage of previously inexperienced people to their ranks.

WEEDS TREES & TURF was "on target" when it advised that "The time has come when direct mail to key prospects, advertising in local newspapers, and perhaps some TV and radio spots can pay dividends." Equally appropriate was its conclusion that, "As an industry, we know these ideas are not new. But we also know that many in our industry are not capitalizing on these money making areas of their business."

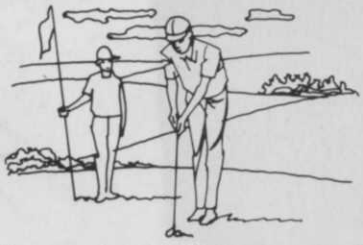
Perhaps WEEDS TREES & TURF was too gentle in its prodding. Despite the great advances that are continually being made through agronomical research, improved chemicals, more efficient equipment and better seed, etc., too many professionals are sadly lacking when it comes to selling their expertise. Having valuable hard-earned field knowledge and experience is not a surefire way to fatten a bank account if you don't let the potential buyers know what you

(continued on page 28)

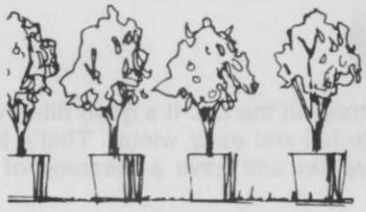
Horticultural Perlite...

The multi-purpose soil conditioner for turf, containers and propagation.

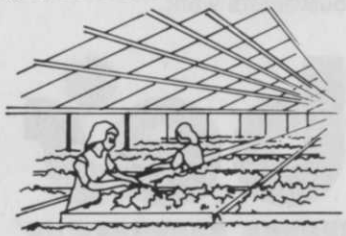
Professional landscapers and grounds maintenance men have long made Horticultural Perlite one of their main 'tricks of the trade'. It's an ideal soil conditioner that helps promote "a sea of green velvet". You see, by preventing compaction, it keeps the soil loose enabling more oxygen to reach and help nourish the root system. And because Horticultural Perlite also retains three to four times its weight in moisture, it keeps the root network moist long after watering. The result is a beautiful blanket of green growing on a thick healthy, robust root-system that not only keeps grass beautiful, but prevents **golf courses, institutional and campus lawns and residential lawns** from getting soggy, mushy or soft underfoot.



Nurserymen find Horticultural Perlite practically indispensible for **container grown plants and shrubs** because of its ability to retain moisture, and to keep the mixture around the root environment loose. It is also a great "starting mixture" for transplanted stock as it helps reduce the incidences of transplant shock. And because Horticultural Perlite is sterile and non-toxic, it won't rot, decompose, disintegrate or break down. Nor will it help promote insect life. Being light in weight, Horticultural Perlite makes container moving light work and shipping costs a lighter expense. It's not only ideal for your plants — Horticultural Perlite is ideal for your business.



For **plant propagation**, Horticultural Perlite soil mix is almost as important as sunlight. Because of its water-retention characteristics, this mixture maintains an even distribution of moisture to stimulate fast root development in cuttings and to speed seed germination. Most important, by keeping the starting mixture loose, Horticultural Perlite permits a freer flow of oxygen to help nurture the new growth. This also makes transplanting easy; without root damage; and without undo shock. Horticultural Perlite is inert matter that can last indefinitely in your seed beds. It is sterile, odor-free and can't promote insects or bugs. It is a great asset for the new beginnings of plant life.



Perlite Institute, Inc.

45 West 45th Street • New York, N. Y. 10036 · (212) 265-2145

Circle 110 on free information card

It takes a boy to do a man's job.

Our Cub 185 Lo-Boy® was built to do a man's work. And what makes him such a hero is the way he can manicure the largest lawn areas. His low profile gives him greater cutting stability on inclines and embankments, greater maneuverability under trees and close to bushes, and even easier cutting through thick and thin weeds and brush.

With the extra muscle of the new 18.5 hp engine the Lo-Boy won't be just a fair weather worker. Add a snow-thrower or a front blade, and the Lo-Boy clears out driveways and parking areas fast. Come spring, he's rarin' to go on landscaping, tilling, earth moving and hauling. And remember, there's a whole range of optional attachments available. All of them easily operated by the hydraulic lift and the independent PTO—sure fire ways to keep a Lo-Boy working your property year 'round.

But the Lo-Boy is more than rugged, it's dependable, too. Built-in IH quality, plus the new Service Maintenance Agreement, and ever reliable IH service will keep your Lo-Boy in great shape for years and years.

And the thing that really makes it easy to take on a Lo-Boy is the flexible finance plans available through an IH dealer. They require little or no down payment to qualified buyers.

Stop in to see your dealer soon, and take a look at the Lo-Boy. He's all the help you'll need.

INTERNATIONAL HARVESTER

Circle 140 on free information card

TRIMEC®

Only Trimec Costs less –

Now you can begin to manage the whole spectrum of broadleaf pests in a total-control program starting this fall.

We concede that nothing is perfect.

But we do say that TRIMEC comes closer to the turfman's dream of weedkill perfection than any other herbicide.

Before we examine the reasons why — all four of them — we want to discuss the exclusive, patented TRIMEC formulation and synergistic action. For therein lies the key.

Trimec's active ingredients — 2,4-D, MCPP and dicamba — are no secret. Each is a chemical widely used and thoroughly proved in broadleaf control.

Each chemical has its unique qualities and different effects in weedkill. But each also is limited so that none of the three chemicals, alone, can deliver the all-round versatility essential to a total, professional turf program. The reach of each chemical is too limited.

Through research and testing, these three chemicals finally were combined in a way that enhances the best of each for broadleaf control. Significantly, it was also discovered that the 3-way formulation assumed a fourth dimension of power — a synergistic strength that has far more than mere additive effect. Mathematically, 1+1+1 added up to 4, 5, or more in weedkill power.

Such multiplication of effect from combined ingredients is called synergism.

TRIMEC herbicides are synergistic. Thus, surprisingly light applications to turf pack a deadly wallop to broadleaf enemies.

Now, these three proven chemicals have been carefully reacted and balanced together, inseparably, to form a new and far superior herbicide . . . TRIMEC.

is Four ways better:

safely controls all weeds, works even in cool weather.

The name is TRIMEC.

Read on to learn why TRIMEC is the best broadleaf herbicide you can buy:

1) TRIMEC is positively effective.

No other herbicide is so totally reliable in destroying the wide spectrum of broadleaf weeds.

The fact is, we have yet to discover a broadleaf weed that can resist TRIMEC'S lethal punch.

Normally, this escape-proof herbicide completely kills actively growing weeds with one application, correctly timed and applied. The result is positive and definite — turf thrives in weed-free abundance.

2) TRIMEC is safe

It's the safest herbicide available for grasses, because of the small amounts of both 2,4-D and dicamba. And because the recommended dosages are so light, there is no significant root uptake. Consequently, TRIMEC does not harm flowers, trees and shrubs.

Thus while TRIMEC is deadly to weeds, it is gentle and harmless with grasses, flowers, trees and shrubs, when properly applied.

More, TRIMEC is friendly to the environment. The small dosages required put less chemical into the soil. And, because all components are biodegradable, they are soon rendered harmless by natural soil organisms.

3) TRIMEC herbicides cost less

Although the cost-per-gallon may be as much or more than other herbicides, **the actual cost-per-acre** of weed control is substantially less. Smaller amounts of chemicals just naturally reduce the cost. Additional economy results from its effectiveness, which almost always eliminates the need for repeated applications, which saves labor and equipment costs.

TRIMEC's **effective** cost is the lowest of all broadleaf herbicides.

TRIMEC® is a registered trademark of PBI-GORDON Corporation, U.S. Patent No. 3,284,186.

4) Cool-weather wallop

TRIMEC herbicides work well in late autumn or early winter, when temperatures are in the fifties. This gives you a tremendous advantage.

At last, you can destroy promptly those late-starting dandelions, plantains, chickweeds, etc. that sprout **after** your summer spraying.

Going into winter with a clean turf has a great **spring** benefit — you needn't spray so early for dandelions that you miss most of the later-starting weed crop.

No longer are weeds in control. Now you're in command, planning your work and working your plan to nip weeds at the correct time, in any season.

Special for sensitive grasses

TRIMEC is available in a special Bentgrass formula made especially for Bentgrass, and other grasses sensitive to higher rates of 2,4-D.

"I've had better results on our fairways with Trimec than with any other chemical I've ever used."
Bill Norrie
Superintendent
Scenic Hills Country Club
Pensacola, Florida

"Trimec is the most effective and economical broadleaf herbicide a sod grower can use."
Lyle Reiss
Owner
Marshall County
Sod Farms

"We want immaculate, weed-free turf . . . Trimec delivers it."
Carl Ripper
Resthaven Cemetery
West Des Moines, Iowa

Why fall is the best time to "TRIMEC" dandelions

TRIMEC's cool-weather wallop lets you destroy them with one treatment in late autumn or early winter, when temperatures have cooled to the 50s range.

This gets the latecomers — any weeds that sprout after your summer spraying. The advantages are obvious.

By going into winter with a weed-free turf, you can spray *later* next spring, when the *late-starting* weeds are coming on. You won't have to spray *early* just to knock out the blooming dandelions!

This is your *first step* toward total control with TRIMEC — the best herbicide available.

GORDON'S

PROFESSIONAL TURF PRODUCTS

Mfd. by pbi/gordon corporation
KANSAS CITY, KANSAS 66119

Circle 115 on free information card

Reducing Maintenance Costs— And Keeping the Quality Up

"WITH PEOPLE having so much leisure time and golf increasing so much in popularity, I had to find a way to get things done in less time," said Charles Santoianni.

Superintendent of Sayville, New York's Island Hills Golf Club, Santoianni has concluded that the business of maintaining golf courses will probably never return to what it was a few years ago.

"Golfer traffic has gotten heavier and heavier for about the last four years," Santoianni said. "We have one 18-hole course, and it used to be that we could work on nine holes from seven to nine o'clock in the morning, then open them to golfers and get the second nine holes completed before the golfers got on it. We can't do that anymore.

"On Tuesday, for instance, we have 225 ladies playing in the morning and we have to be off the course by nine a.m. We're lucky to get back on it by three o'clock, and three-fourths of our working day is shot. It goes like that every day, with about 600 golfers on the weekend and a total of 1,500 or 1,600 per week. We can't do maintenance work at night because the daytime golfer pressure has made it necessary to water at night."

Too Much Overtime

The expenses were getting out of hand, Santoianni said. Because his crew was forced to work at odd hours, overtime costs were reaching about $10,000 per year. With golfer numbers continuing to increase, he didn't expect to see any change in the future. "And," he added frankly, "there's a possibility of money getting tighter and budgets getting smaller." So, with an eye on costs, he modified his maintenance program.

Mechanizing as many operations as possible and reorganizing his fungicide program are the two major ways he's saving money and getting the job done more efficiently.

Adding a Toro Sandpro to Santoianni's stable of equipment has cut the job of raking sandtraps from

(continued)

Santoianni compares his recently-obtained Sandpro with the smaller machine his crew formerly used to rake sandtraps. The bigger machine reduced the time requirement by more than half, he says.

The 27-year veteran of turf management combines a four-season, full-fairways preventive fungicide program with frequent spot-checks. His biggest disease problem in past years has been Pythium.

Whether it's fertilizer, fungicides, or insecticides, applications must be timely to get the desired results, Santoianni says. His goal is not only to cut costs, but to get the job done on time.

THE UNDERCOVER WEED KILLER.

Weeds and roots under asphalt paving can cause tremendous damage. But you won't know they're doing it until it's already done. That's why you need CASORON, the Undercover Weed Killer.

CASORON is approved for use under asphalt, whether it's a recreational court, a golf path, or a parking lot. Applied over the subgrade, CASORON soon begins to emit a weed-killing vapor. This gas is trapped under the asphalt, forming a long-lasting protective blanket against weed breakthrough. Straying roots from ornamental plants bordering asphalt surfaces can't damage the surface because CASORON is a "root-inhibitor." The tips of the ornamental roots stop growing when they come in contact with the CASORON-treated soil, and no harm is done to the ornamental.

CASORON is also perfect for weed control around all kinds of ornamentals and trees. Use it in parks, beside buildings, along highways, in cemeteries, or almost anywhere to eliminate the need for costly, time-consuming close trimming and mixing. It effectively kills more than 65 perennial and annual weeds without harming ornamentals or sterilizing an area for future planting.

NOW...TRY IT FREE

If you've never used CASORON, we'd like to give you a first-hand look at how it works. Send us your name and title on your business letterhead. We'll send you a FREE 5-pound package of CASORON and applicator, along with more detailed information. Whether you use it under asphalt or in your regular weed control program, you'll find that CASORON really works.

T-H THOMPSON-HAYWARD CHEMICAL COMPANY
P. O. Box 2383
Kansas City, Kansas 66110

"STOP! All pesticides can be harmful to health and the environment if misused. Read the label carefully and use only as directed."

5-6860

Circle 125 on free information card

Charles Santoianni, superintendent of Island Hills Golf Club, Sayville, New York, found that mechanizing some operations and modifying his fungicide program provided the increased efficiency he needed in the face of increasing golfer traffic.

seven and one-half hours (three men at two and one-half hours each) to three hours (one man). A Hahn Triplex greensmower reduced mowing time on greens, aprons and tees from 10 hours (four men at two and one-half hours each) to three and one-half hours (one man). "And one-half hour of that time is spent greasing the machine," the superintendent noted. "Since we mow daily, that savings in time amounts to $28 a day."

"Also," he added, "since we've become more mechanized, we can put more men to work on maintaining the rough, which has always been our biggest headache."

Santoianni has ordered a Cushman spray wagon which will reduce the 24-hour job of spraying greens (two men at 12 hours each) to four or four and one-half hours (one man). "I'd like to get two wagons eventually to use on the fairways," he added. "We could get all the fairways sprayed by two men in five or five and one-half hours."

Savings Pay for Equipment

Any new equipment carries a significant initial cost, Santoianni pointed out. But he believes the long-term savings — and a better looking course resulting from timely maintenance — will make them well worthwhile. His goal is not to put good employees out of work, but to avoid increasing the size of his crew more than necessary, eliminate overtime from the payroll whenever possible, and get work done on time.

Santoianni's second cost-cutting move consisted of taking a long, hard look at his fungicide program. What he saw caused him to modify his program and resulted in a savings in cost.

"For the last couple years, Pythium has been our big problem around here," Santoianni said. "I'd been using a contact fungicide that was costing me a total of $1,400 for three applications on my fairways over a one-week period. I tried a different product — Acti-dione RZ — and found out I could control Pythium for one-quarter to one-half the cost."

Santoianni made that particular discovery almost by accident. "I'd been using Acti-dione RZ in my fungicide program since 1956, but I hadn't really tried it on Pythium."

Simply experimenting with a different fungicide may save Santoianni as much as $1,000 each time he treats a Pythium outbreak on his fairways, he said.

Curative to Preventive

Over a two-year period, Santoianni has been gearing his fungicide program away from a curative approach and toward a preventive program. This involves less reliance on full-systemic fungicides and greater reliance on a four-season, full-fairways program.

Despite the greater cost of a full-fairways application, Santoianni believes it saves money over the course of a season by minimizing the number of curative applications and the damage that occurs before the disease is controlled.

(continued on page 28)

Exhalt800, the Winter Coat.

It's only a thin film. But it wraps your turf up safely for the Winter. Helps keep it healthy, all through the dormant season.

Keeps Fungicide On Won't Wear Off.

Exhalt 800 is a Sticker-Extender. It encapsulates the fungicide. Keeps it in place, so it can do its work.

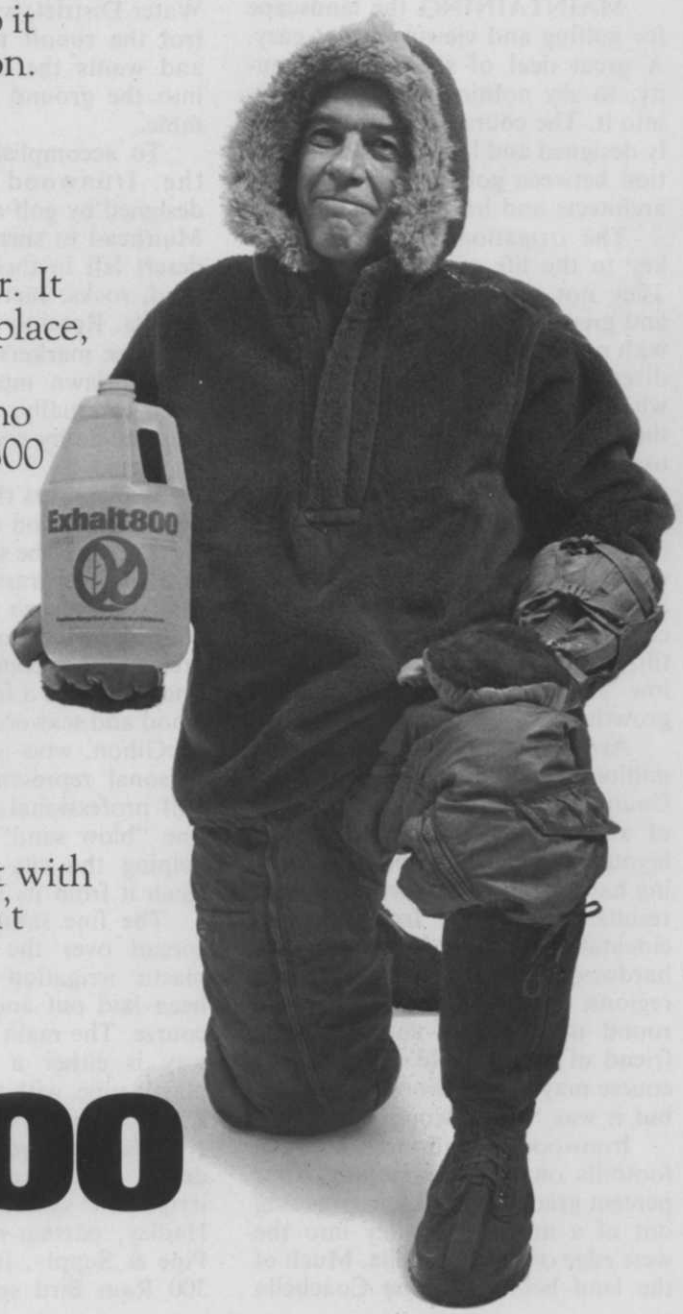
No matter how cold or windy, no matter how much rain or snow, Exhalt 800 lasts until active turf growth begins.

Your investment in fungicides won't get washed away!

Easy and Economical

Only 1 pint per 100 gallons of fungicide solution. Spray it on. It dries within an hour.

After spraying, rinse equipment with water while it is still wet. Residue won't damage equipment — or clog it when next used.



Exhalt800™

Sticker-Extender

Crop Protection Division, Kay-Fries Chemicals, Inc., Stony Point, N.Y. 10980

Coachella Valley

Greener By The Year

MAINTAINING the landscape for golfing and viewing is not easy. A great deal of skill and ingenuity, to say nothing of money, goes into it. The courses must be carefully designed and laid out in consultation between golf pros, golf course architects and irrigation engineers.

The irrigation systems are the key to the life of the golf courses. They not only water the fairways and greens, but they also feed them with nutrients and keep them free of disease. The irrigation systems, while watering the lawns, can feed them with soluble fertilizers and are used to spray on pesticides.

More and more golf superintendents are applying fertilizers through the irrigation systems. Fertigation, as it is called, saves on labor, is fast and can be precisely controlled. Inexpensive soluble fertilizers can be applied oftener and at low rates for steady, continuous growth.

Arnold Palmer's beautiful, new million-dollar, 125-acre Ironwood Country Club course is an example of a first class, ultra modern golf layout where planning and engineering have combined to produce great results. The name, Ironwood, incidentally, is taken from that of a hardwood tree that frequents arid regions. After playing a practice round on the new course, a pro friend of Palmer told him that the course may be Ironwood to Palmer, but it was "wood wood" to him.

Ironwood is contoured between foothills on a gently sloping (four percent grade) alluvial fan spreading out of a mountain valley into the west edge of the Coachella. Much of the land belongs to the Coachella Water District, which wants to control the runoff through the valley and wants the water to percolate into the ground to feed the water table.

To accomplish these objectives, the Ironwood fairways were designed by golf architect Desmond Muirhead to surround "islands" of desert left in their natural state — sand, rocks, cactus, and even jackrabbits. Recently some of the polyvinyl tee markers were damaged as though lawn mowers had chewed them. Actually, the scarring had been made by coyote pups teething on them.

Water seeps through the natural desert formation readily. Too readily. It needs to be stalled near the surface to give grass roots the opportunity to absorb the moisture. The stalling effect on the Ironwood greens was accomplished by mixing fine sand with a forest mulch of redwood and seaweed, explained Glenn McGihon, who is Arnold Palmer's personal representative, as well as golf professional at Ironwood. The fine "blow sand" was obtained by helping the city of Palm Springs clean it from its streets.

The fine sand and mulch were spread over the greens after the plastic irrigation pipe system had been laid out and in place for the course. The main line for each fairway is either a 4-inch or 8-inch plastic pipe, with the laterals 1 ¼" to 2" in diameter.

The man who helped in the design of Ironwood's $250,000-plus irrigation system was Bryce A. Hadley, partner-manager of Indio Pipe & Supply, Inc. More than 1,300 Rain Bird sprinkler heads are strategically located throughout the course. Many are rotor pop-up heads that pop up when water pressure is applied. The Rain Bird TH valve is used on the course because it doesn't clog from the sand in the water. Each valve controls a lateral that has an average of six sprinklers.

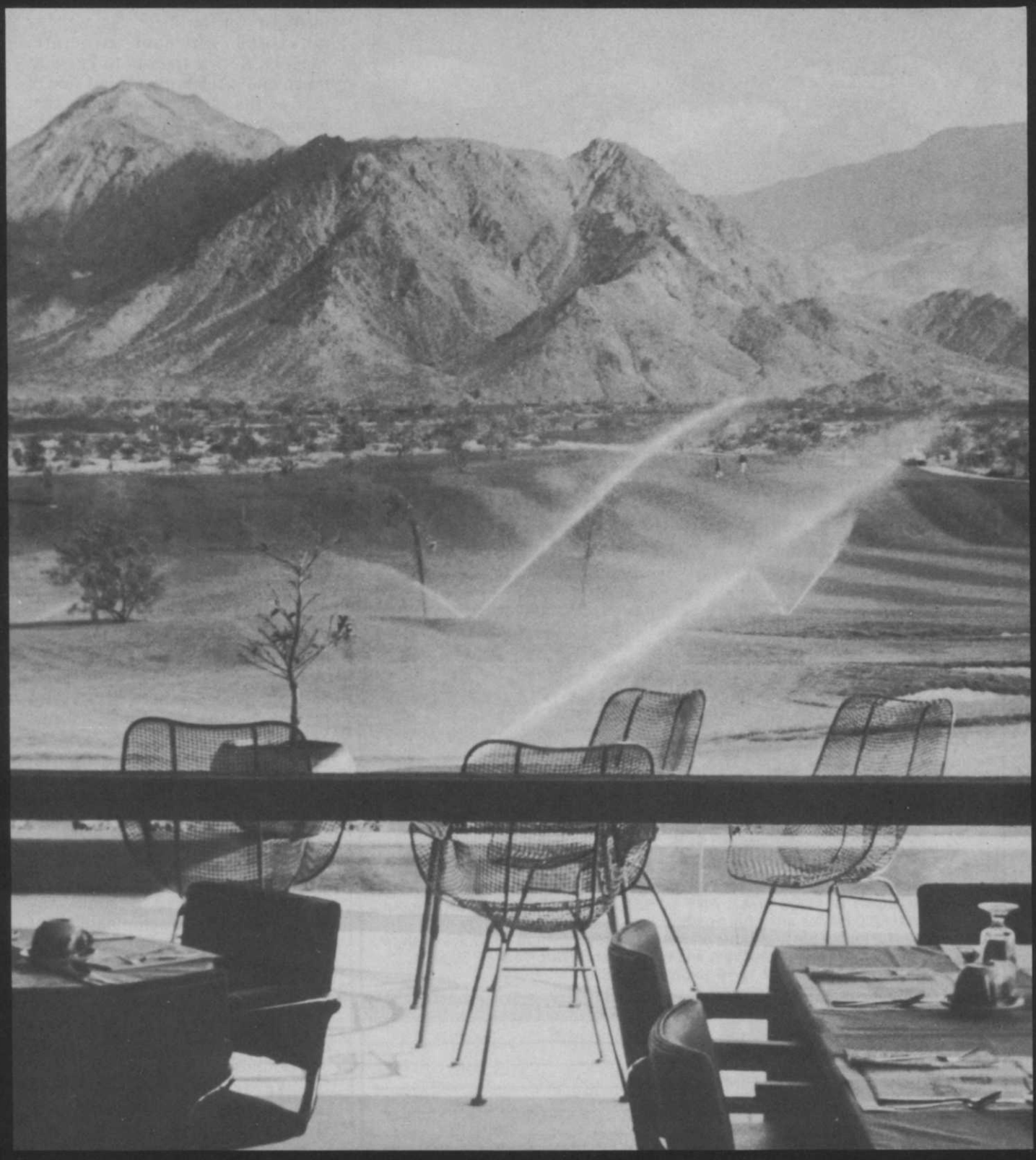
A completely automatic watering system is maintained through Rain Bird station controllers, with twelve stations on each controller, on the average. In addition, the course is one of the few equipped with tensionometers that monitor moisture in the soil. Golf course superintendent Michael McGehee is using them to learn how much moisture is required to maintain field capacity.

"Because we wanted everything at Ironwood to be first class," commented McGihon, "we wanted to make certain that the irrigation system was first class too. So we selected Rain Bird equipment. Another reason was that Mr. Hadley, the Rain Bird distributor, was close by in Indio. He worked closely with us all the way." In fact, 29 of the 36 courses in the Palm Springs area use Rain Bird equipment.

At present, the irrigation system is supplied by water from one well. It has a capacity of 1.4 million gallons per day. At the course's reservoir pumping station, 2,300 gpm is maintained at 125 psi. The average head pressure is 62 psi,

(continued)

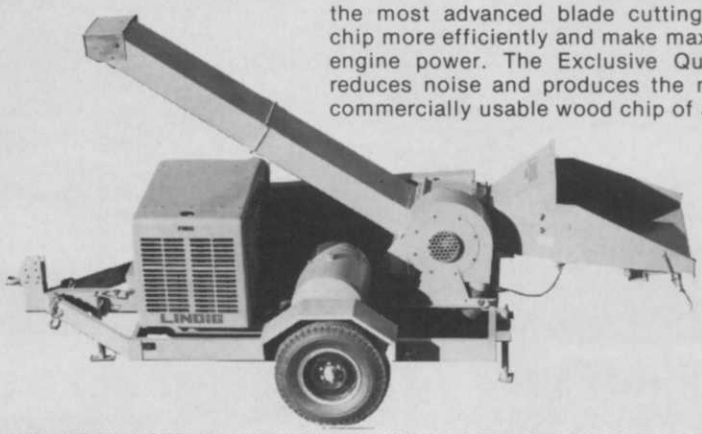
Right: *The rugged beauty of the desert mountains provides a picturesque backdrop offsetting the lush green of the fairways in this view from the clubhouse.*



View of Rain Bird No. 51 SAM rotor on first landing zone from the tee in the most unique golf course in the desert. The roughs are undisturbed natural desert and the golfer must tee off over the natural roughs to the landing zone.

THE QUICK AND QUIET QUALITY CHIPPER

LINDIG CHIPPERS work faster and quieter. With the most advanced blade cutting system you chip more efficiently and make maximum use of engine power. The Exclusive Quietone Rotor reduces noise and produces the most uniform commercially usable wood chip of any machine.



33% STRONGER BLADES THAN ANY OTHER STANDARD CHIPPER. Lindig Series 1600/1200 blades are a full one-half inch thick precision alloy steel . . . assures you far longer life than other blades. All models feature our QuickChange rotor for the fastest easiest servicing and adjustment. *BUILT TO BE BEST . . . . MODELS 30 TO 160HP IN 9-12-16 INCH SERIES.*

LINDIG

MANUFACTURING CORPORATION
Box 133 – 1877 W. County Road C
St. Paul, Minnesota 55113

SEND COMPLETE INFORMATION

Name _____
Firm/Dept. _____
Address _____
City _____
State _____ Zip _____

Circle 128 on free information card

COACHELLA *(from page 24)*

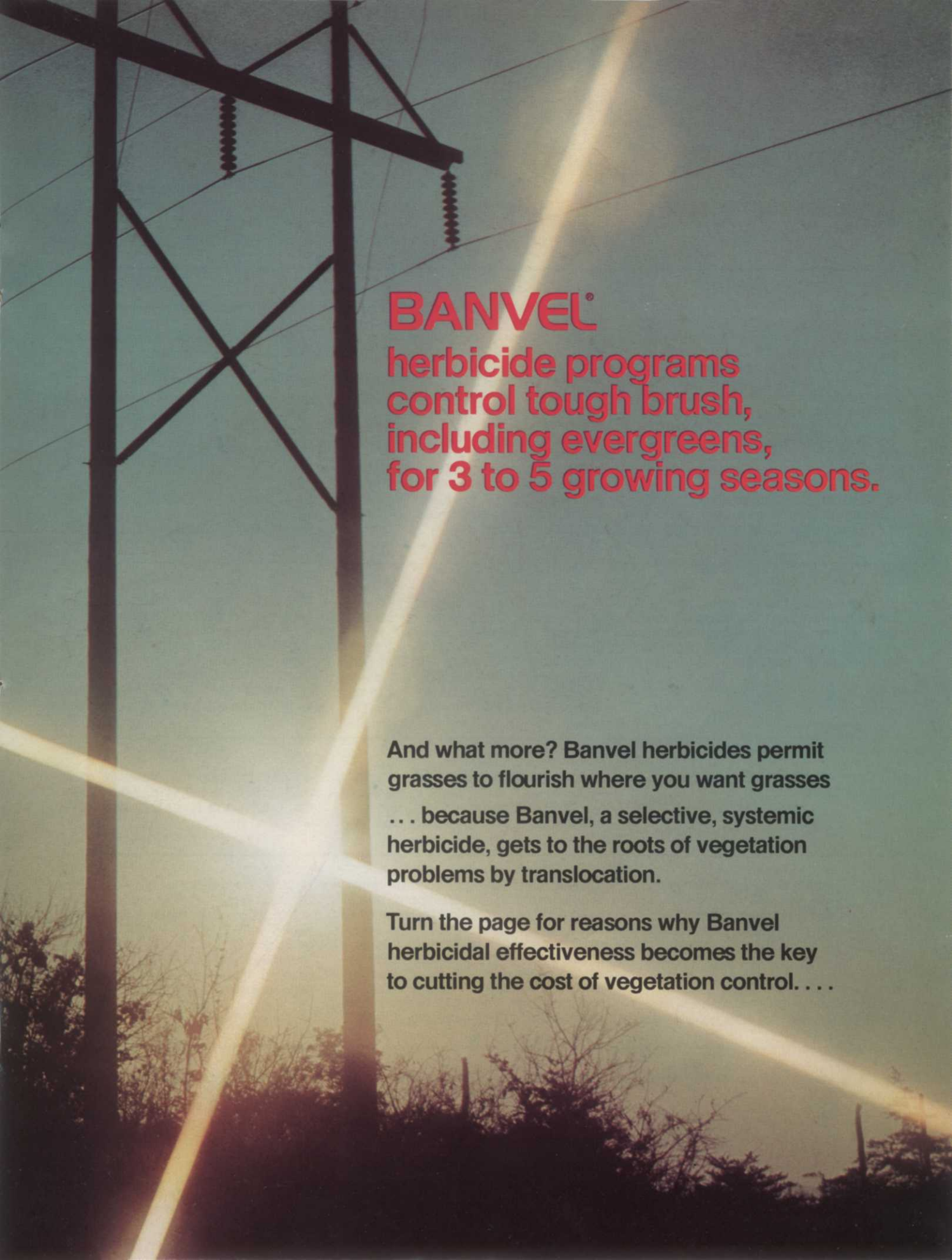
McGehee said. The course has six lakes, three of them reservoirs and the other three water hazards. All of their bottoms are lined with polyvinyl to prevent seepage.

As desired, the irrigation system also delivers ammonium sulfate and nitrogen for fertilizer, as well as potassium for root structure. McGihon, who appears to know as much about the horticultural side of golf as the playing side, finds that fertigation is "really the answer" to feeding. He believes the irrigation system also will be the answer to combating such invaders as fungus. It can be treated with pesticides delivered through sprinkler heads. Fungus is less of a problem than in more humid regions, he said, but it still can get a foothold in the desert where grass requires frequent watering.

A major green thumb experiment is under way at Ironwood. It could result in greatly minimizing the keeping-things-green problem for future desert golf courses. The standard practice at those courses is to plant the fairways in bermudas and to overseed with winter rye grass in the late fall. This is done so that the rye can take over during the six or more weeks that the bermuda is brown and dormant. It has been necessary to use the bermudas because they are the only grasses known that will withstand the desert heat. Unhappily, the bermuda dormant period happens to coincide with the peak of the winter visitor season in the Coachella. Overseeding with rye costs all the Coachella courses a grand total of more than one million dollars per season just for the seed alone. No small item.

In considering the different kinds of grasses that might be used for the Ironwood fairways, McGihon wondered if some way might be found to eliminate or at least cut down on the expenses of the overseeding. The cost of winter rye seed has been as little as three to five cents a pound. However, last year the price went up from 5.6 cents a pound to 38 cents. It takes 400 to 600 pounds per acre.

"We were ready to seed about the middle of September," McGihon recalled. "If we'd put down a hybrid bermuda it would be



BANVEL®

herbicide programs control tough brush, including evergreens, for 3 to 5 growing seasons.

And what more? Banvel herbicides permit grasses to flourish where you want grasses . . . because Banvel, a selective, systemic herbicide, gets to the roots of vegetation problems by translocation.

Turn the page for reasons why Banvel herbicidal effectiveness becomes the key to cutting the cost of vegetation control. . . .

Why and how Banvel® industrial herbicide formulations in your vegetation control program make excellent economic sense....

Q. We've sprayed picloram for two or three cycles and got rid of many brush species, but the tough brush gets bigger and tougher. Our problem is to control a mixture of oak, ash, hickory, poplar, sassafras, cedar . . . well, you name it. What formulation do you suggest in a long-term selective brush control program along our transmission line right-of-way?

A. Basal applications of Banvel®-510, one pound dicamba and two pounds 2,4,5-T per gallon, has proved effective and economical for the control of both hardwood and evergreen species, including root-suckering trees such as sassafras, chokecherry, aspen, sumac, and locust.

As with picloram, Banvel-510 herbicide is applied by hydraulic spray, using a mix of two gallons of Banvel-510 in 98 gallons of oil, at the rate of approximately 100 gallons of spray mixture per acre of brush.

Spray the basal parts of the brush and tree trunk from the ground line up to a height of 1-1/2 to 2 feet. Spray until runoff, with special emphasis on covering the root crown.

Treatment may be made at any time during the year.

As a foliage spray with water, use Banvel®-320 or Banvel®-710 at the rate of one gallon in 99 gallons of water and spray the entire plant to runoff.

Q. Our experience indicates that picloram is a long-residual material, and our company is greatly concerned about this. How does Banvel dicamba compare in this regard?

A. The half-life of picloram is in excess of 100 days. The half-life of Banvel dicamba is 25 days. Once Banvel dicamba gets into the plant system, it works over a period of two or three years in disrupting the plant's cellular structure. In the soil, Banvel dicamba that is **not** absorbed by the root system of the plant dissipates quickly. It breaks down into harmless compounds in the process of biodegradation.

Soil moisture, organic matter content and temperature greatly influence Banvel dicamba degradation, but metabolism by soil micro-organisms is the major factor in degradation.

Q. Can we tank mix Banvel dicamba with 2,4-D and 2,4,5-T?

A. You certainly may. Banvel herbicides have Federal label registration for tank-mix combinations with the phenoxies for both water- and oil-soluble formulations. Also by tank-mixing with 2,4-D and 2,4,5-T, you can double the acres you can spray.

Q. Some parts of our right-of-way are cattle-grazed. We find that picloram is not registered for use in grazing land. What about using Banvel herbicide here?

A. Banvel dicamba herbicide has Federal registration for use on pasture grasses. Established tolerance in grass is 40 ppm and in milk, 0.05 ppm. There is no withholding period for meat animals on Banvel dicamba when used alone on treated areas, with this exception: do not graze meat animals on treated areas within 30 days of slaughter. Also, do not graze dairy animals on treated areas within 60 days after application at high application rates; up to 90 days delay is required before harvesting hay.

No tolerances have been established with 2,4-D or 2,4,5-T in or on grass. 2,4-D, 2,4,5-T and picloram are federally registered for use on pasture grasses. However, picloram has EPA registration for use in Texas.

Q. What about Banvel 4-W.S. herbicide toxicity?

A. Banvel® 4-W.S. herbicide was developed and tested during the period when extensive toxicological and residue requirements were necessary to obtain Federal registration. It has met every requirement of the USDA, the FDA and the EPA in this regard, and obtained label clearance for industrial brush control in 1968. Be sure to observe grazing and harvesting restrictions shown on the label.

Although Banvel 4-W.S. is several times more active on brush than the phenoxy compounds, it is approximately five to ten times less toxic than 2,4-D or 2,4,5-T. The LD_{50} in rats for dicamba acid is 2900 mg/kg. 2,4-D is 300-470 mg/kg, and 2,4,5-T is 390-640 mg/kg.

Q. Much of our right-of-way is overgrown with a varied mixture of brush and weeds. What chemical should we use in a foliar spray?

A. If there is a mixture of species—conifers, softwoods, hardwoods, vines—you need a formulation that controls the broadest spectrum. Use Banvel-320, containing one pound dicamba, one pound 2,4-D and one pound 2,4,5-T per gallon. Or use Banvel-710, containing one pound dicamba and two pounds 2,4,5-T per gallon. Banvel dicamba alone controls most species, including softwoods that phenoxies do not control. Moreover, Banvel dicamba permits grasses to flourish.

Q. I have willows taking over my ditch banks. Picloram and 2,4,5-T are not registered for ditch bank use. What chemical can I use to get rid of these trees and a lot of other brush and weeds?

A. Banvel 4-W.S. dicamba gives excellent control of willows and their destructive, water-seeking roots, and is registered for ditch bank brush control. It also destroys broadleaf weeds and extensively rooted vines. Because it is a selective weedkiller, at proper dosages it will not harm grasses, so you can avoid erosion along banks of irrigation or drainage ditches. Banvel dicamba, alone or in combination with 2,4-D, is registered for vegetation control along ditch banks.

Q. Last year we had difficulty getting an adequate supply of Banvel dicamba and phenoxy in premixes, or in any form. What is the supply situation this coming year?

A. Banvel dicamba and phenoxy should be in adequate supply, in spite of demand that has doubled each year for the past three years for use on several crops and on grazing lands throughout the United States. Recently, Velsicol completed a new manufacturing plant that has more than doubled the production of Banvel dicamba.

At present, our supplies of 2,4-D and 2,4,5-T acid are limited. You can, however, profitably stretch the 2,4-D or 2,4,5-T materials you are able to find with the various Banvel dicamba tank mixes.

Q. Can I use Banvel dicamba to sterilize certain areas?

A. Banvel dicamba is not a soil sterilant, and should be used at label dosage rates for brush and broadleaf weed control. Banvel 4-W.S. herbicide is selective, allowing grasses to grow for soil cover and to prevent erosion. If you wish to sterilize the soil, your contract applicator can advise you, or call Velsicol on the Banvel "Hot Line."

Q. How does Banvel 4-W.S. herbicide kill brush? Why is it more effective than the phenoxy compounds?

A. Phenoxy compounds enter the plant through the leaves and bark, while Banvel 4-W.S. herbicide enters the plant through the roots as well as the leaves and bark. It is several times more active biologically than the phenoxy herbicides. Its different mode of action and greater mobility within the plant give a higher degree of brush and vine control with Banvel 4-W.S. dicamba alone or with Banvel dicamba plus phenoxy mixtures than with phenoxies used alone.

Banvel 4-W.S. dicamba not only controls those brush species controlled by 2,4-D and 2,4,5-T, but also controls many species not controlled by phenoxy chemicals, such as evergreen species and suckering hardwood species. There are no other herbicides in commercial use that outperform Banvel 4-W.S. for control of brush and vines.

Because Banvel 4-W.S. dicamba translocates, it gives a more complete kill, even though the entire plant is not sprayed. Other herbicides may merely suppress. Therefore, Banvel 4-W.S. is more effective on the toughest weeds, trees and vines that have the deepest or most extensive root system. Translocation of Banvel 4-W.S. herbicide through the plant system eventually gets to the roots.

Q. I put out Banvel-510 herbicide in September as a basal application, according to your label directions. Brush browned out very well, but in June the next year, some trees started to leaf out. Does this indicate partial failure?

A. It's true that elm and certain other species often leaf out during the first growing season. However, Banvel-510 herbicide usually gives complete kill in the second growing season after the application. Translocation takes time. Chemicals that give immediate, first-year brownout do not necessarily give third-year kill, so that you have to spray more often. Full benefit of Banvel-510 herbicide, its ultimate effect, is in the third year.

Banvel 4-W.S. dicamba by itself, applied to brush, is slow in giving brownout. With some species brownout is never achieved, as leaves curl and fall without turning brown. With the addition of 2,4,5-T brownout is faster, occurring within two to four weeks after application. The addition of Accutrol® adjuvant will increase penetration and absorption of the chemical.

Some species take longer to die than others. For a few, it will be 18 to 24 months from time of application.

In short, this means that you spray on a three- to five-year cycle . . . you seldom have to go in again sooner than three years.

Q. My management has made a decision not to use 2,4,5-T for brush control. Do you have a product I can use that does not contain 2,4,5-T as a basal application to control brush?

A. Yes, for sure. Banvel®-520 herbicide, containing one pound dicamba and two pounds 2,4-D per gallon, controls a broad spectrum of brush. Why don't you give this formulation a good test? But, if you feel that it is not doing the job as expected, call Velsicol on the Banvel "Hot Line" free of charge. On certain species, Banvel-520 herbicide proves effective but works more slowly than Banvel-510 herbicide.

Q. We use some pellets in our vegetation control program for brush and vines. Does Velsicol manufacture a Banvel dicamba pellet?

A. Yes, Velsicol sells Banvel® XP pellets, containing ten percent dicamba in clay. It is applied by hand or mechanical applicator, scattered uniformly on the ground under the tree, within six inches of the trunk. Banvel XP dicamba leaches to the roots where it is taken up and translocated throughout the tree, destroying growth tissue as it goes.

Q. I've been using 2,4,5-T on poplar, sumac, chokecherry, locust, sassafras, aspen, and persimmon with good kill the first year. But right now, about two years after, these areas are thick with root sprouts. Would this happen if I used the right Banvel dicamba plus phenoxy formulation?

A. Not at all likely. Banvel herbicide combined with a phenoxy kills dormant buds and gets absorbed by the roots of these trees as well as through the leaves and bark, to put a sure end to root suckering. As long as you get good coverage around the crown of the plant, you will get good brush control. Banvel-510, containing 2,4,5-T, is recommended, unless you have an environmental restriction against 2,4,5-T. If so, then you may be able to use Banvel-520, containing 2,4-D. Lower in cost than Banvel-510, Banvel-520 does not control quite as broad a spectrum of brush species, especially maple.

Q. Environmentally, how does Banvel dicamba compare with other brush control chemicals?

A. The table shows a comparison of Banvel dicamba with other brush control chemicals.

ENVIRONMENTAL COMPARISON OF BRUSH AND WEED CONTROL CHEMICALS

	BANVEL	2,4-D	2,4,5-T	TORDON
Chemical Toxicity (acid) oral LD_{50} over 2500 mg/kg	Yes	No	No	Yes
EPA Federal Label Approval on Pasture and Rangeland	Yes	Yes	Yes	*
Waiting Period Between Treatment and Grazing:**				
Beef Cattle	No	No	No	*
Dairy Cattle	Yes	Yes	Yes	No
Federal Residue Tolerances Established on:				
Pasture Grass	Yes	No	No	*
Crops	Yes	No	No	No
Milk	Yes	No	No	No
Soil Persistence Half-Life	25 days	4 days	20 days	100+ days
Ditch Bank Application (registered label)	Yes	Yes	No	No
Controls Both Hardwood and Softwood Species	Yes	No	No	Yes

*EPA registration for use in Texas.
**Read all labels for limitations on harvesting hay and slaughter restrictions.

Every vegetation control program has unique requirements.

To help you overcome your particular problems, Velsicol maintains a toll-free telephone that you may use . . . all year round

BANVEL HERBICIDE "HOT LINE"

DIAL (toll free):
800-621-4129
Illinois Callers: 800-972-8381

between 9 a.m. and 4 p.m., Monday thru Friday. Calls made outside of these hours will be automatically recorded and answered within 48 hours by phone or mail.

Just cut out and tape on or near your phone for handy reference.

Note: Before using any pesticide, read the label.

BANVEL® Herbicide from VELSICOL

VELSICOL CHEMICAL CORPORATION
341 East Ohio Street, Chicago, Illinois 60611
Velsicol is a subsidiary of Northwest Industries, Inc.

getting close to the time it would go dormant. The latter part of October when we were likely to get our first flash freeze we'd have lost it. The Santa Ana strain, which is the best of the bermuda hybrids, in my opinion, has a complete loss of color during a dormancy period of about six weeks. Furthermore, the discoloration could last as long as three months."

One alternative that McGihon investigated was to plant bermuda and then overseed with a colonial highland bent that is raised in this country.

"They've been using this bent in California's San Joaquin Valley around Bakersfield, where the temperatures approach those of the desert," he said. "They've gotten up to three years of color out of one overseeding with that highland bent. The bermuda doesn't force it out."

McGihon had to take another factor into consideration. The desert islands adjoining the fairways were to remain in their natural state. If bermuda had been planted, he couldn't guarantee that the grass wouldn't spread into those areas. The only way it could have been prevented was through the use of herbicides, and McGihon didn't want to use them because of the possibility of the herbicides percolating into the underground water tables.

Another possibility was a New Zealand Dry Land Bent Grass that had been introduced into this country from Australia. It had been developed in an arid area and supposedly was heat-tolerant, drought-resistant and would maintain its color through the winter.

McGihon made weekly visits to a turf grower in nearby Indio who had some 20 acres planted in the new grass. He watched its growth, its response to a substandard watering system, and its recovery from adverse feeding practices. Some of the acreage was lost. The observations showed that the grass could not tolerate salinity in the water and required less water than bermudas.

It was not a creeping grass so there would be no problem of its spreading into the natural desert areas at Ironwood. However, this same characteristic meant that the recovery rate of divots on the fairways would be slower. It would result in more hand seeding and top dressing on the fairways. A problem, too, that hadn't been solved was how it would stand up against golf car traffic. Most bent grasses have a very low tolerance to wear.

The No. 51 SAM rotors provide an artificial oasis on this desert golf course.

International Turf Company of Phoenix brought some of the grass to McGihon, its representatives saying they had put some on a golf course at Henderson, Nevada, in a 60-40 mix with bluegrass.

Despite its problems and unknowns, the possibilities of this grass intrigued McGihon. With the well engineered and equipped irrigation system at Ironwood, some of the earlier problems could be overcome, he believed. The grass might even remain green the year around, eliminating the costly overseeding problem.

McGihon got the go-ahead and the new grass was seeded on the fairways. Added to it was fast-growing red fescue to act as a nurse crop for the Dry Land Bent, shading and protecting the new, young grass, which grows in tufts. The red fescue will go because it is neither heat nor drought tolerant. The greens and tees are of Penncross Bent, which heals more readily from divoting than the other bent grasses.

"The water requirements of our two different bent grasses are entirely different," McGihon said. "But

PRINCETON

EQUIPMENT FOR THE SOD INDUSTRY

(Ask the Man Who Owns One)

PRINCETON MFG. CO.

2625 Johnstown Road, Columbus, Ohio 43219

Tel. (614) 475-8520

Circle 112 on free information card

CUSTOM LAWN *(from page 16)*

have to offer and then help them appreciate your efforts.

Much as each businessman should periodically take inventory of his physical assets, we should also take realistic stock of our promotional ammunition, meaning our own ability to "package" our service so that a positive overall message is conveyed to our customers. If you know that promotion and merchandising are your weak points . . . get help! This is the age of specialization and paying a promotional expert is preferable to paying a bankruptcy lawyer. Hiring a professional advertising agency or counselor may be one of the best investments you can make, just as you tell your customers that they will receive special knowledge and skills when they retain you.

As custom lawn application services become even more popular with ex-do-it-yourself homeowners, it seems inevitable that the number of profit minded laymen attracted to this field will increase because the investment required to get started is relatively small and superficial know-how can be acquired in a short time. This has been the case in the past and it's a good bet that the trend will continue, particularly with the large number of capable people who have lost jobs in the past two years and are seeking security in their own businesses.

Even though the opportunities in this field presently are still vast, at some point in the future the competition will become keener. By that time many of these promotional minded newcomers will have gained extensive practical experience and staked out strong competitive positions in their markets.

Today's complacent professional who ignores the handwriting on the wall and does not sharpen his promotional skills with as much care as he devotes to his equipment runs the risk of experiencing a harsh financial jolt in the not-to-distant future. Knowing how to identify and control insects, fungi and weeds is, of course, indispensable to the conduct of a professional lawn service, but this knowledge can be obtained rather quickly. Knowing how to identify and control a customer in a rapidly changing market may be more important in the long run to the financial health of the professional. □

COACHELLA *(conclusion)*

this combination can be programmed into our flexible irrigation system, which has been designed with this combination in mind."

McGehee points out that the New Zealand grass gets more watering because there is no retention mulch on the fairways, as there is on the greens. During May the fairways got 30 minutes of watering every 24 hours (three inches a week) and 20 minutes for the greens. The entire 125 acres are watered at night in 13 hours. Slightly longer watering periods were anticipated as the weather got hotter in the summer.

The course opened on schedule April 30, and golf superintendents are watching with great interest the 125-acre experiment at Ironwood. If the New Zealand grass proves to be a good, year-around grass, it will mark a milestone in desert golf course history.

Unfortunately, if the new grass does survive well the year around, it will not help already established golf courses that have been using bermudas. They could hardly afford the shut-down time required to kill off the bermudas before reseeding with the new grass. But any additional courses built by the existing golf clubs could take advantage of it.

Additions to courses are constantly being made in the Coachella. Although Ironwood has a ways to go before it sells out the condominiums and lots associated with its country club, it already has plans to add a nine-hole executive course, and, south of the clubhouse, an additional 18-hole course that will be shorter and less difficult than the present one. Then, too, seven acres have been set aside for a par three short course.

Since last year the Coachella golf growth has looked something like this: Ironwood has completed its first 18. Indian Palms has added another nine. Sunrise and Sun King each has added another 18. Palm Desert Country Club has added a nine. And so it goes. The Coachella continues to get greener and greener. □

REDUCING *(from page 22)*

"We start our fairway program about March 15 to April 1 with RZ, sometimes in combination with chelated iron," Santoianni explained. "That first application usually takes care of leaf spot. Our last application depends on the weather, but you have to spray sometime for snow mold. One year, we made our last application just before Christmas."

Santoianni's preventive four-season treatment usually amounts to 36 to 44 fungicide applications per year. Besides the regular treatments, Santoianni and his assistants check the turf regularly for disease problems that may have come on since the last regular spraying. "There are a couple key spots I always check, where disease always starts first," the 27-year groundskeeping veteran noted. "But usually, the only time we make an extra spraying is when we find Pythium."

Getting the most value out of any chemical depends on proper timing, Santoianni said. He'll reschedule a routine fungicide or fertilizer application if the weather conditions aren't right. "Knowing when to use any product is the secret of getting effective results," he said. "Your most effective products — including fertilizer — can be ineffective or actually damage the grass if they're applied under the wrong conditions. Then you've not only wasted your money, but you may have done harm rather than good."

Santoianni has experimented with still another innovation that he thinks will make for more timely and economical insecticide use. "I tried a sample of Diagnostic Aid last year, and it really will help you find out what kind of insects are present," he said. "Different insects are present at different times of the year, and you need to get your insecticide on at the day of hatching. Diagnostic Aid can really help you target your applications. I plan to use it next year, spot-checking a few greens about every two weeks."

Santoianni considers his program of increased efficiency and budget-consciousness a return to "the old way." But with increased golfer traffic on most courses, and the looming threats of recession and inflation, a program that trims the fat from the operating budget may be more of a glimpse into the future.

From left: *Frank Dobie, MITF director and general manager of Sharon Golf Club, Sharon Center, OH; Bill Burdick, MITF director and superintendent of Canterbury Golf Club, Cleveland, OH; Dr. Fred Gray, MITF president; Bill Lyons, MITF director and owner of Lyons Den Golf Club, Canal Fulton, OH; and Frank Floyd, president of Canterbury Golf Club.*

Musser Invitational Benefits Research

The second Stroke Play Invitational Tournament, for the benefit of the H. B. Musser International Turfgrass Foundation, was held recently at Canterbury Golf Club in Cleveland, Ohio. This event was again arranged and conducted by the Cleveland District Golf Association. Mr. Henry J. Meiers, Executive Secretary of the Cleveland District Golf Association, said that the response was very gratifying and he predicted that the event would continue to grow with each consecutive year.

Proceeds of this event go to the H. B. Musser International Turfgrass Foundation to fund fellowships for individuals in the turfgrass research field who will be getting masters and doctorate degrees in turfgrass sciences, international in scope.

A field of 116 golfers participated. Prizes were awarded for low gross and low net. The $35.00 entry fee, covered practice balls, golf carts, golf and an excellent buffet lunch. The event will be held again next year at a site yet to be determined.

Tree Borer Control Perfected

Dr. John Severson, a plant physiologist in the Dept. of Biology at St. Louis University has evidence which indicates that borers can successfully be controlled in municipal street trees with a minimum cost and effort.

His research to perfect an improved technique of controlling insects was prompted by recent regulations of the EPA regarding uses of certain insecticides in municipal tree spraying programs which has made blower-mist sprayers almost obsolete.

In a cooperative research venture with the St. Louis Community Development Agency, Severson treated a boulevard planting of Modesto Ash infested with the Lilac Tree Borer. The insects hatch in May and June and the larvae feast on sap in the cambium layer throughout the summer. The tree is soon completely prunned of top

(continued

Game Time to Give Award

Game Time will again award four scholarships for the Spring Term of 1976, providing tuition support for research projects in the fields of recreation and leisure services. More than 200 colleges and universities that offer undergraduate or graduate degrees in those fields have been invited to participate.

Life Science Products Co. Stops Kepone Manufacture

EPA has ordered Life Science Products Company of Hopewell, Virginia to stop the sale, use or removal of the compound Kepone.

Life Science is the nation's sole manufacturer of the chemical and is under exclusive contract to the Allied Chemical Corporation. Kepone is used to fight fire ants and roaches.

Life Science's plant closed voluntarily July 24 after seven out of 10 employees became ill. The Virginia State Health Department later allowed it to reopen, but only to package the company's remaining inventory.

Alvin R. Morris, Deputy Regional Administrator, said the order was issued in accordance with the Federal Insecticide, Fungicide and Rodenticide Act. An investigation is also being conducted to determine the health-related effects of Kepone as well as the extent to which it may be found in the water and on the land near the plant.

The order permits shipment of the remaining inventory to the Allied Chemical Corporation in Baltimore, Maryland in order to have the material located at a site where it can be safely handled and stored.

Further manufacture of the product is also prohibited since Life Science is not a registered pesticide-producer establishment.

The order requires Life Science to notify EPA in advance of any shipment, specifying the dates, amouints and modes of transportation.

Failure to comply with the order could subject Life Science to criminal penalties of up to $25,000.

growth by the insect girdling the limbs.

How to control an insect inside a tree that is planted in a tree well surrounded by concrete sidewalks was the thesis of the research. A systemic insecticide was dissolved in a nutrient solution containing iron chelate and a plant growth stimulant which is subsequently injected into the root zone. A specially designed patented drill/injector was used to go rapidly through the concrete and adjacent soil without interference of roots and rocks. The drill/injector is attached to a self-contained unit with regulating control tanks. Various concentrations of systemic insecticides were used with some being dissolved only in water. Water soluble dyes were used as indicators in some of the treatments.

Results showed rapid translocation of the systemic insecticides into the woody tissue and leaves. Dead insect larvae were found in their tunnels containing the dye. Of course interest was the recoverative power of the Modesto Ash once the insect population was reduced or eliminated. New shoot growth and healing of open scars were observed when the treatment solution was applied.

Severson has shown that with proper tool and scientific control methods, municipalities can contro insects in street trees without spraying.

Northeastern Scientists Study Gypsy Moth Control

Scientists in Maryland and Delaware will study biological ways to suppress gypsy moths under two cooperative agreements with the U.S. Department of Agriculture (USDA).

The gypsy moth, Porthetria dispar, is a forest pest which causes severe forest and environmental damage. Maryland is on the border of an expanding gypsy moth population.

USDA's Agricultural Research Service (ARS) will provide $169,000 for the two-year studies.

At the Maryland Department of Agriculture, Annapolis, Dr. R. M. Altman, entomologist, will lead a team of scientists studying ways to suppress gypsy moth outbreaks. Disparlure, a synthetic sex attractant for male gypsy moths, will be field tested in infested areas of Maryland. This testing, over about 35,000 acres, will determine disparlure's effectiveness in confusing and inhibiting mating in isolated infestations. Dr. Ralph E. Webb, entomologist, Beltsville, Md., is the ARS representative for this $160,000 agreement.

In Delaware, the Agricultural Experiment Station of the University of Delaware, Newark, will study moths on the Delmarva peninsula that may be alternate hosts for gypsy moth parasites. Imported parasites and predators of gypsy moths have been unsuccessful in keeping gypsy moth populations low. Alternate hosts could play a major role in maintaining sufficient populations of these natural enemies of the gypsy moths. Dr. D. F. Bray, professor of entomology and applied ecology at the university, is the project leader.

The 1975 expanded revision of the authoritative HANDBOOK first published 1955 — last revised 1966. Backed by assistance from outstanding U.S. turf authorities. Full color illustrations of turf diseases, weeds, weedgrasses and methods of control, proper spray methods, systemic turf fungicide discussion, use of turf colorants, etc. Focus on principles of sound turfgrass management, turf disease and weedgrass identification, and other features. Available through Mallinckrodt's nation-wide network of Turf Products Distributors for $1.95.

Dow to Open 2,4-D Plant Bolster Supply for 1976

Dow Chemical U.S.A. announced that a new plant for the production of 2,4-D herbicide will be started up in the second quarter of 1976, eliminating the gap that has existed between supply and demand for the past two to three years.

Fred H. Sullivan, Dow marketing manager for herbicides, said critical shortages had been caused by worldwide growth in demand and shortages of raw materials. The new Dow plant will manufacture not only the 2,4-D but also the basic building blocks for this material. Under construction in Midland, Mich., since 1973, the new plant will increase Dow's domestic capacity for 2,4-D production by 70 percent.

The most widely used of the phenoxy herbicides, 2,4-D is in high demand in agriculture because it increases crop yields through the control of broadleaf weeds in lands planted to wheat, corn, oats, barley, sorghum, rice and sugar cane. It also is used to increase grass growth through brush and weed control on pastures and rangelands.

"Although 2,4-D has been used for 30 years, weeds have not developed resistance to the material," Sullivan said. "But there are changes in types of weed infestations. For tougher weeds, the farmer now uses 2,4-D in combination with newer herbicides, such as picloram, and the economics stay well within an efficient range."

Earlier this year, a report by the Council for Agriculture Science and Technology forecast "expanded usefulness for 2,4-D and related chemicals in the management of such diverse resources as croplands, forests, ranges, waterways, industrial lands, public utility properties, wildlife habitats, urban parks, athletic fields and landscape plantings."

"The phenoxy herbicides are widely used," the report said, "because they are more efficient and usually less hazardous and less injurious to the environment than alternative methods."

Environmentally, 2,4-D rates well because of its rapid breakdown into common elements such as carbon dioxide and water. This new facility will have a minimum of by-products.

"Our experience with your lawn seed, Game, was so unusual I felt that you would be interested in hearing about it.
An abandoned hospital site which had stood idle for 15 years was seeded on July 3. Our only preparation was to grade, install a sprinkling system, and water.
It was difficult to believe that less than 4 weeks later, on July 28, we cut the grass for the first time.
I cannot speak too highly of your remarkable grass seed, Game."
Lt. Col. John LaFranchise
Gowen Field, Idaho

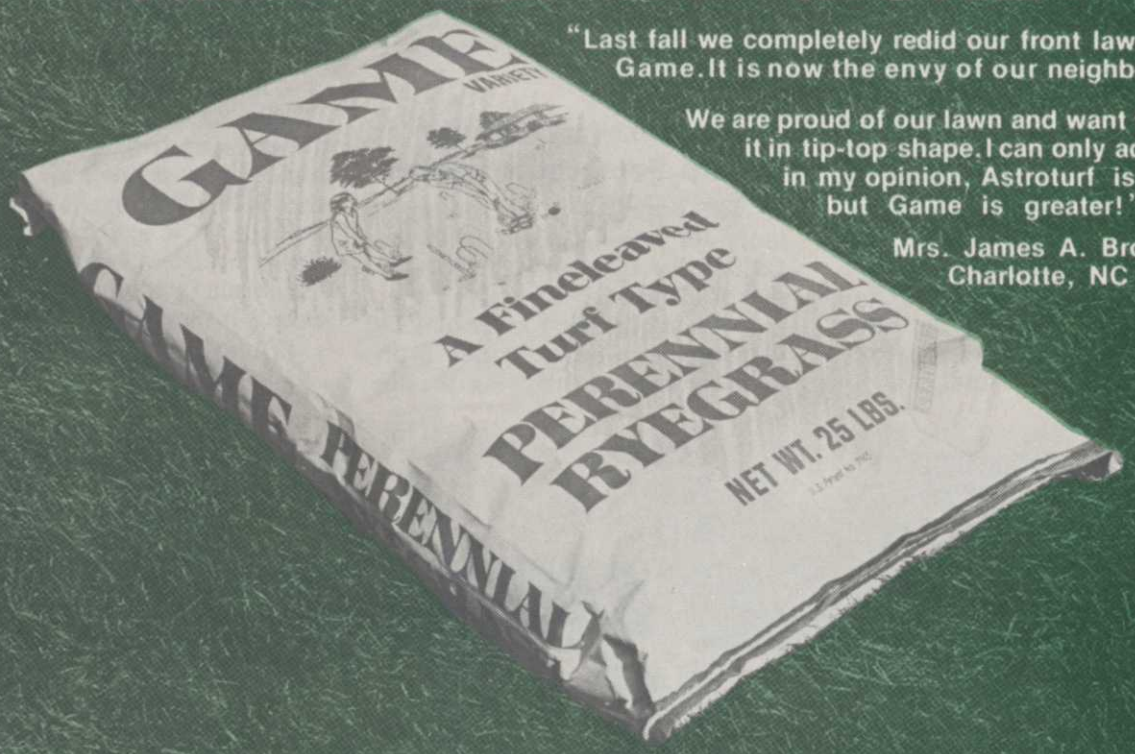
"In May, 1974, we prepared a seed bed and sowed Game. Within 3 days the seed germinated and had ¼-inch grass showing. In 4 weeks, we had a beautifully established green lawn.
Soil conditions being different does not seem to deter Game from germinating. Neither have I observed any winter effects. The lawn stands up to children's activities and has the resilience of a plush pile carpet. I would recommend Game to any landscaper or homeowner. I plan to use Game whenever possible."
Klaas Ellerbrook Jr.
Hillsboro, Oregon 97123

NEED WE SAY MORE?

"Last fall we completely redid our front lawn with Game. It is now the envy of our neighborhood.

We are proud of our lawn and want to keep it in tip-top shape. I can only add that, in my opinion, Astroturf is great, but Game is greater!"

Mrs. James A. Brown Jr.
Charlotte, NC 28210



For your nearest game distributor contact:

WILLAMETTE SEED & GRAIN CO.

P.O. Box 791 · Albany, Ore. 97321
Phone [503] 926-8883

P.O. Box 25 · Shedd, Ore. 97377
[503] 491-3675

WE HANDLE ALL VARIETIES OF:
RYEGRASSES • TALL FESCUES • BENTGRASSES • KENTUCKY BLUEGRASSES • CLOVERS • FINE FESCUES • VETCHES • ORCHARD GRASS • AUBADE TETRAPLOID RYEGRASS ANOTHER ONE OF OUR SPECIALTIES

Circle 132 on free information card

Fire Ant Control Extended Soil Movement Restricted

Fire ant quarantine restrictions on the movement of certain agricultural items are being extended to cover additional parts of Alabama, Arkansas, Florida, Georgia, Mississippi, North Carolina and Texas, the U.S. Department of Agriculture (USDA) announced today.

James O. Lee, deputy administrator of USDA's Animal and Plant Health Inspection Service (APHIS), said the action was taken because the imported fire ant has spread into areas that formerly were free of the pest.

"These states are already under the federal import fire ant quarantine," Mr. Lee explained, "But we restrict movement of items such as soil and earth-moving equipment out of those areas that are actually infested."

The latest action put movement restrictions — for the first time — on articles in all or parts of these counties: Marshall, Ala.; Drew, Ark.; Broward, Dade, Martin, Monroe, Palm Beach and St. Lucie, Fla.; Chandler, Douglas, Hancock, Jefferson and Polk, Ga.; Leflore, Sunflower and Tippah, Miss.; New Hanover, N.C.; and Anderson, Bandera, Caldwell, Calhoun, Frio, Gonzales, Grayson, Guadalupe, Kerr, Leon, Limestone, Navarro, Robertson, Upshur and Wood, Tex.

Also, movement restrictions are being extended to more parts of these previously infested counties: Lawrence and Winston, Ala.; Ashley, Ark.; Carroll, Haralson and Morgan, Ga.; Bolivar, Grenada, Humphreys, Lafayette and Prentiss, Miss.; Columbus and Pamlico, N.C.; Darlington, S.C.; and Collin, Comal, Fayette, Matagordo, Rusk and Tarrant, Tex.

"The fire ant's sting is extremely painful," Mr. Lee commented, "and can cause severe reactions in allergic persons." Besides damaging some crops, fire ants deface landscapes with large mounds and interfere with farming, gardening and use of parks, school grounds and other recreational areas.

The revised quarantine takes effect Aug. 6. A notice to that effect will be published in the Aug. 6 Federal Register. To obtain copies, at no charge, write Plant Protection and Quarantine Programs, APHIS, USDA, Federal Center Building, Hyattsville, Md. 20782.

First Centralized Library Set Up For Drip Irrigation

The world's first centralized library for information on drip irrigation is being set up at the University of California, Riverside.

Funding for the Center on Drip Irrigation — a relatively new drop-watering process involving the frequent slow application of water to soil — was authorized at the July, 1974 International Drip Irrigation Congress in San Diego.

"California has by far the greatest acreage of drip irrigation in any state," said irrigation and soils specialist Albert W. Marsh in explaining the choice of UCR as an information center.

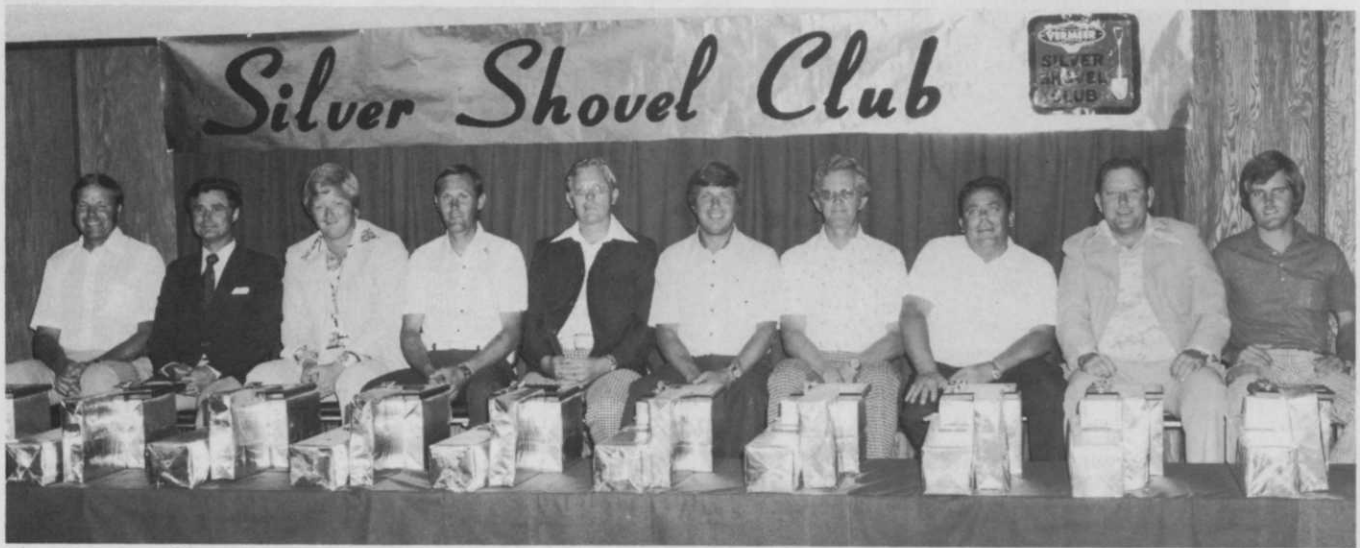
"And Southern California has the greatest concentration in the state," he added. "Research on the process has been done mainly by people from this campus plus farm advisors and specialists in the counties. Riverside is the most logical place from that standpoint."

Since drip irrigation has been employed in the U.S. for little more than 10 years, information on its use will probably be limited to journals, monographs and commercial periodicals. Agriculture experiment stations in all 50 states and experts throughout the world are being contacted for materials.

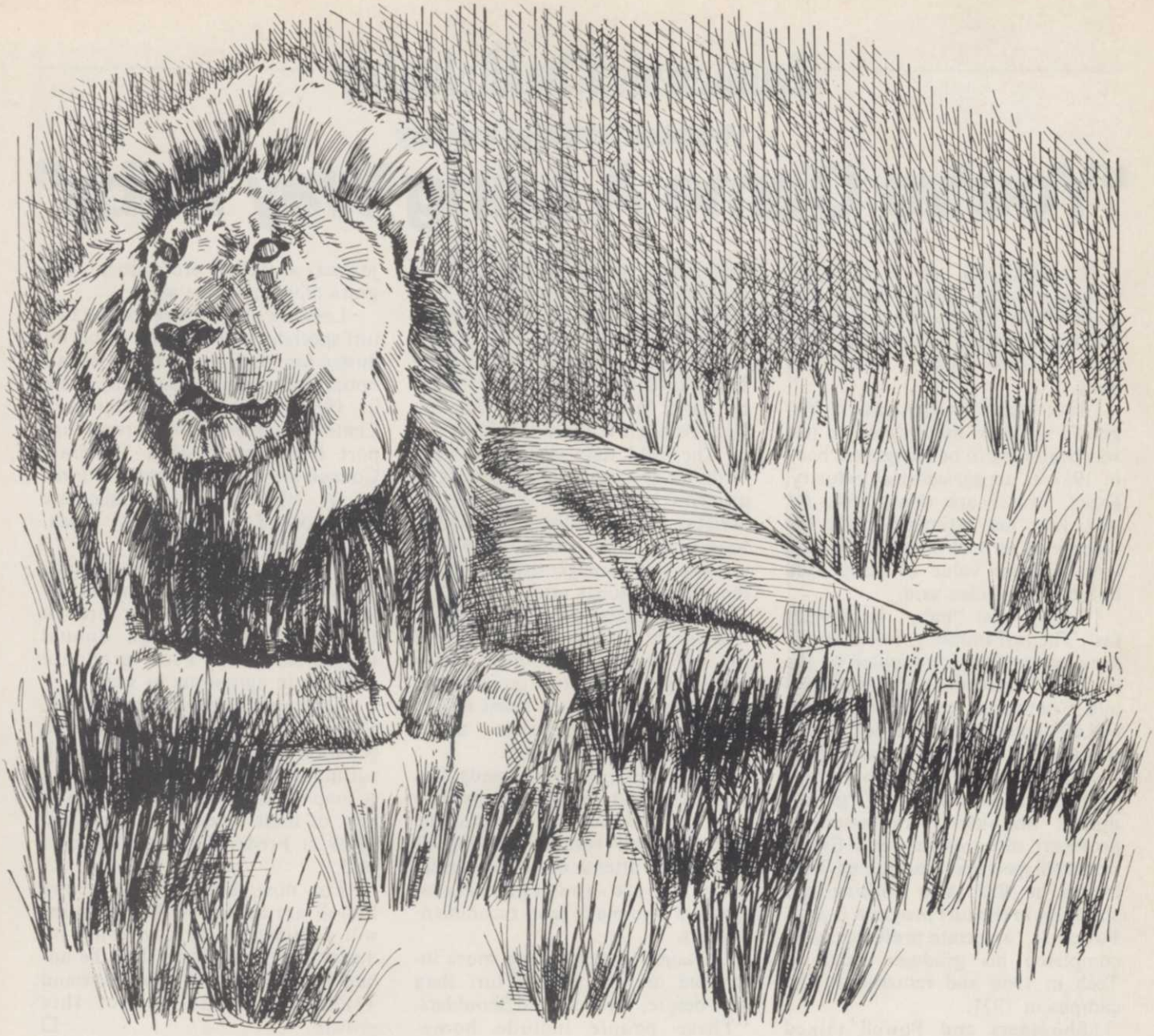
Developed after World War II strictly as a greenhouse watering system, drip irrigation was first expanded on a major scale in Israel in the 1960s, where available water was limited. UCR soil scientist Sterling Davis initiated experimentation in California in 1963 on two citrus orchards in Southern California.

Today, some 50,000 acres in the

(continued on page 38)



Ten Vermeer sales and service representatives were honored recently at the National Silver Shovel Awards banquet held by the Iowa-based firm. Named as charter members of the new sales club were: Leroy Jones, Noblesville, Indiana; Kevin Klein, Findlay, Ohio; Bob Cramer, Arvada, Colorado; Ron Herford, Olathe, Kansas; Mel Vander Schel, Eureka, Illinois; Bill Zigterman, Batavia, Illinois; Jerry Hilgenberg, Batavia, Illinois; Larry DeBruin, Pella, Iowa; Don Slagter, Pella, Iowa; and Ron Veenstra, Pella, Iowa. The awards which go to the top ten Vermeer salesmen of underground construction equipment throughout the U.S., were presented during a national sales meeting held in Des Moines, Iowa. Vermeer, headquartered in Pella, Iowa, manufactures and nationally markets a complete line of trenchers, vibratory plows and tree handling equipment.



Need a Lawn Tamer?

Where ever lawns are out of control, the 4 Like Wild products work to calm grass down to rich, lush green. Lawns everywhere benefit from a little Like Wild! Like Wild products quiet a lawn's growls in four ways: Like Wild Plus, Like Wild Soil Conditioner, Like Wild Wetting Agent, and Like Wild Poly Mini-Feed. Versatile lawn care for all types of lawns.

PICK UP YOUR FREE SAMPLE OF LIKE WILD LAWN CARE PRODUCTS TODAY!

GUARANTEE

Like Wild guarantees the consumer-purchaser complete product satisfaction. If for any reason the consumer-purchaser is not completely satisfied with the performance of Like Wild, we will refund the full purchase price to the consumer-purchaser upon receipt of written notification within one year of purchase.

Distributed by: **Delta Earth, Inc.** P.O. Box 8045, Chicago, Ill. 60680

Virginia's Turfgrass Industry

"You've Come A Long Way Baby"

GLANCING at a turfgrass program dated August 1957, Virginia Tech agronomist John F. Shoulders smiled broadly as if to say, "You've come a long way baby."

The "baby" in this case is Virginia's turfgrass industry which just was beginning to be recognized back in 1957 as an agricultural industry. Exact figures are unavailable for that year but estimates place the acreage of all turf at about 200,000 with a gross value of about $40 million, Shoulders said.

Today, that "baby" is growing fast. The turf industry, based on the most recent figures compiled by the Virginia Department of Agriculture and Commerce, presently includes 618,000 acres under cultivation with income at $524 million annually.

"That's nearly as much acreage as there is in corn in Virginia," mused Shoulders, an associate professor of agronomy and Extension turf specialist who joined Tech faculty in 1952. Also working as a specialist in the turf program is A. J. Powell Jr., associate professor, who completed his graduate work at Tech in 1966 and returned to the campus in 1971.

Shoulders and Powell talked about the 19th annual Turfgrass Field Days and Trade Show recently held at the University. Since its inception, the event has grown from fewer than 50 participants to almost 300 at the 1975 program.

Traditionally held on the campus in September, the event this year was held in the spring instead, to beat the summer rush to the golf greens managed by many of the golf course superintendents for whom the program is designed to assist. The Tech agonomists also wanted to show the effect of the spring stress on grass.

Another change that the agronomists noted in this year's turfgrass program was the expansion of the traditional exhibit of turf equipment and materials into a trade show, featuring the latest in professional turf machinery and materials by some 20 companies.

To accommodate the trade show, the event was moved from the Turfgrass Research Center to nearby Lane Stadium, where Virginia Tech football is the usual fare.

The field days continued their tradition of tours of experiments in progress on turfgrass species and varieties, fertilization, herbicides, fungicides, and other work involving turf management practices, the turf specialists said.

The field days combined with the trade show making the event one of the few within a 300-mile radius where professional turf growers and managers can find the latest in turf equipment and materials "under one roof," Shoulders said.

Special efforts were made this year to attract certain groups who have not traditionally attended the field days, and these fefforts paid off in a higher attendance of comercial lawn people and agricultural workers who make lawn recommendations.

"People are becoming more interested in high quality turf than ever before," commented Shoulders. "These people include homejowners as well as professional turfgrass managers," he said.

Looking ahead 20 years, the two turf specialists see a lucrative turf industry for Virginia. Evidence of this optimism is apparent at Tech, where in 1969 a Turfgrass Research Center was opened with strong support from the Virginia Turfgrass Council and area turf organizations. R. E. "Dick" Smith, associate professor of agronomy at Tech, directs the center.

The state's turf organizations, Shoulders said, are investing in the state's turf future not only through the center but through annual scholarships to Tech graduate students in agronomy as well.

Each year along about January, Virginia's turfgrass and sod producers get together with Tech agronomists to compare notes and to map strategies for the future. The next of these meetings will be Jan. 28-29 at Fredericksburg, Shoulders said.

For now, both Shoulders and Powell are confident that turfgrass will continue to be a growing industry in Virginia and that the annual Tech Turfgrass Field Days and Trade Show will reflect this growth. □

Houston B. Couch (right with clipboard), professor of plant pathology and physiology at Virginia Tech, discusses turfgrass disease control with participants in the 19th annual affair.

A comparatively smaller mowing unit, capable of close mowing around trees was among several units displayed by the 23 exhibitors at Tech's 19th Turfgrass Field Days and Trade Show.

This large mowing unit was demonstrated before the 300 people attending the show. Tech's Lane Stadium is in the background.

A turf supplier (left) describes his products for two turfgrass managers attending the show on the Blacksburg campus.

LEARN PROFESSIONAL LANDSCAPING

We prepare you to cash in on countless money-making opportunities in modern landscaping and show you how, by easy steps, to start your own business part or full time. You will learn latest developments in Modern Landscaping, including creative design—plant propagation—revolutionary new methods of growing in manufactured soils—practical soil testing—growth regulators—the low down on fertilizers—easy ways of plant identification—estimating and contracting. My unique home study course features easy to understand assignments with careful detailed illustrations. Certificate Awarded. May. I send **FREE**, and without obligation, my informative **BOOKLET?**

LIFETIME CAREER SCHOOLS Dept. A-901
2251 Barry Avenue Los Angeles, Ca 90064

For More Details Circle (141) on Reply Card

Toro® Groundsmaster 72 high-capacity trimming rotary mower.

Reason to buy #4

Backed by a new one year warranty through a worldwide network of Toro distributors, who are always there to help.

Federal Contract No. GS-00S-28263.
For further information write The Toro Company, Dept. WTT-105, 8111Lyndale Ave., Bloomington, Minnesota 55420

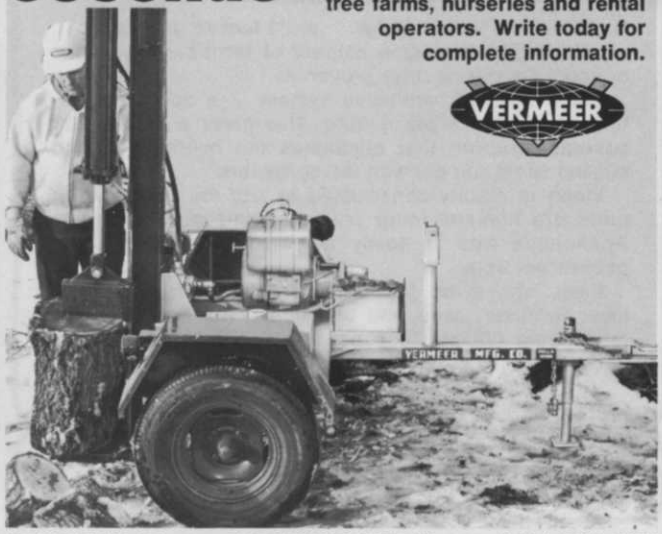
TORO®

Circle 114 on free information card

split logs to firewood in seconds

Faster, easier and more economically than ever before, Vermeer's LS-200 Log Splitter takes the work out of making firewood. A single control lever activates the powerful overhead cylinder, hydraulically wedging a heavy-duty cutting blade through any log up to 30" in height — under 22,000 lbs. of splitting force. You can split, stack and have a truckload of firewood ready for delivery in an hour. Portable and self-contained, Vermeer's LS-200 Log Splitter is ideal for parks, campgrounds, tree farms, nurseries and rental operators. Write today for complete information.

VERMEER



VERMEER MFG. CO. • 7210 NEW SHARON ROAD • PELLA, IOWA 50219

Circle 109 on free information card

NEWS *(from page 34)*

state are devoted to drip irrigation, with more than 100,000 expected to be using it in five years. No other state or foreign country approaches that volume, though Australia, Israel, Mexico and Hawaii have been world leaders.

The high frequency of irrigation allows highly saline (salty) water to be used, and in much smaller amounts than trench irrigation methods. Weed growth is minimal because water tends to be pinpointed near each plant, areas between rows stay relatively dry, and labor is reduced since valve adjustment is all that's necessary to maintain the system.

Though operating costs are reduced, equipment investment remains rather high and usage will necessarily be limited to "high-value" crops, like avocados and fruits, according to Marsh.

"Where water is expensive and limited, however, this will work," he added.

Locating the drip irrigation information center at UCR was the idea of Davis, an agricultural engineer for the U.S. Department of Agriculture. It will be housed in the Bio-Agricultural Library in Batchelor Hall.

Mount Sinai's Al Dennis Heads Turfgrass Council

Alan Dennis, grounds maintenance supervisor for Mount Sinai Memorial Park, Los Angeles, has been elected 1975-76 president of the 660-member Southern California Turfgrass Council.

He was installed during a recent council meeting in Los Angeles. Dennis succeeded Alfred N. Nobel to the post. The latter is a sales representative for B. Hayman Co., Inc., Santa Fe Springs-based distributor of turfgrass maintenance equipment.

Other officers inducted were: 1st vice-president, Sydney H. Gordon, Wilbur-Ellis Co., Los Angeles; 2nd vice-president, Charles F. Rei, Pacific Sod Farms, Camarillo; secretary, James G. Prusa, Mesa Verde Country Club, Costa Mesa; and treasurer, John F. Culbertson, Pacific Sod Farms.

Directors for the coming year will be: Quentin N. Crowell, Brentwood Country Club, Los Angeles; Robert Davidson, Forest Lawn Memorial Park, Glendale; David Mastroleo, Hillcrest Country Club, Los Angeles; and Nobel.

The council conducts regular monthly educational meetings throughout the year, co-sponsors the Spring Turf and Landscape Institute with the University of California Cooperative Extension, promotes special educational seminars as the need arises, contributes funds for turfgrass research programs at the University, and stages the annual Southern California Turfgrass Equipment & Materials Educational Exposition. This year the show will be held October 22 & 23 on the Orange County Fairgrounds in Costa Mesa.

Vicon

is the most accurate fertilizer spreader you can use.

Right behind the spreader. . .or 20 feet to each side. . . your turf gets the same amount of fertilizer if you use a Vicon. Field tests have proven it.

Vicon uses an exclusive system. . .a spout oscillating at 540 times per minute. This gives a rectangular coverage pattern that eliminates the overlapping and missed spots you get with fan spreaders.

Vicon is quality constructed to last for years. Major parts are non-corroding polyester and stainless steel. Application rate is easily adjusted from 10 to 2500 pounds per acre.

Even lime is no problem for the Vicon. It handles lime, fertilizer, seed and chemicals. Six hopper capacities from 600 to 7000 pounds suit your course and budget.

Vicon has the accuracy that professional turf men are looking for. Write today for complete information.

Vicon *the better idea from Holland*
For further information, write
Vicon Farm Machinery, Inc.
P. O. Box 6313, 3741 Cook Blvd., Chesapeake, Virginia 23323

For More Details Circle (154) on Reply Card

Grounds Management Society Elects Officers, Directors

The 1975 annual conference of the Professional Grounds Management Society (PGMS) adjourned with the installation of Allan Shulder as President.

The conference, which was held in Williamsburg, Virginia, September 2 to 5, marked the end of the two-year terms of the Society's three primary officers, the installation of new officers and a turnover in three of the nine board of Directors positions.

Shulder, grounds supervisor of the Greater Baltimore Medical Center and past PGMS Treasurer, replaces Harleigh R. Kemmerer as PGMS President Kemmerer is grounds manager of Princeton University.

Newly elected Vice-President Charles Francis Lay, who is administrative chairman of the Arlington County Branch of the Virginia Polytechnic Institute (VPI) Extension Service, relieves past vice-president Charles L. Hall, Jr. of his duties. Hall also works with the VPI Extension Service, in Fairfax County, Virginia. Filling Shulder's treasurer post is Tom Lepping, landscape supervisor for the County of Oakland, Department of Facilities and Operations in Potomac, Michigan.

A busy, four-day conference program was filled with educational seminars on topics such as pesticides, fertilizers, plant growth, equipment maintenance, and other subjects pertinent to the grounds maintenance field. A collection of the leading experts in the horticulture industry were on hand to lead seminars, or address the society on the specialized areas of their concentration.

Field trips into the conference backdrop of Colonial Williamsburg — a site lush with masterfully planned, well-manicured horticultural attractions that serve as settings for the colonial-period architecture — were welcome escapes from the Conference rooms.

Do Anti-Transpirants Improve Transplant Success?

NURSERYMEN didn't write the last word on transplanting when they developed balling and burlapping tree roots. T. T. Kozlowski, University of Wisconsin forestry researcher and some associates have just concluded research that reinforces common transplant practices in some cases but bursts other common transplant beliefs.

"Trees undergo large water deficits even if they are not moved," explains Kozlowski. "But if they are moved . . . the danger of desiccation (drying out) and death is very great." Kozlowski said nurserymen must move away from the attitude that balling and burlapping are the final answers to transplanting problems. A tree's physiology and water needs are far more complex for such simplistic solutions.

Transplanted trees have a better chance to survive and maintain healthy growth if transpiration can be reduced, water absorption increased, or both. Water absorption can be improved by proper transplant timing, handling, root preparation, and site preparation. Transpiration can be reduced through anti-transpirants, chemical agents that hinder water release by treating the stomata of the leaves. These treatments reduce the tree's water needs by limiting water loss during the stressful transplant period.

Anti-transpirants come in two forms. Film-types coat the stomata, physically reducing the water loss. Metabolic anti-transpirants work internally to induce stomata closure. These two types have limited applicability for all trees. When using an anti-transpirant, Kozlowski recommended nurserymen approach each species and experiment, keeping in mind the toxicity potential.

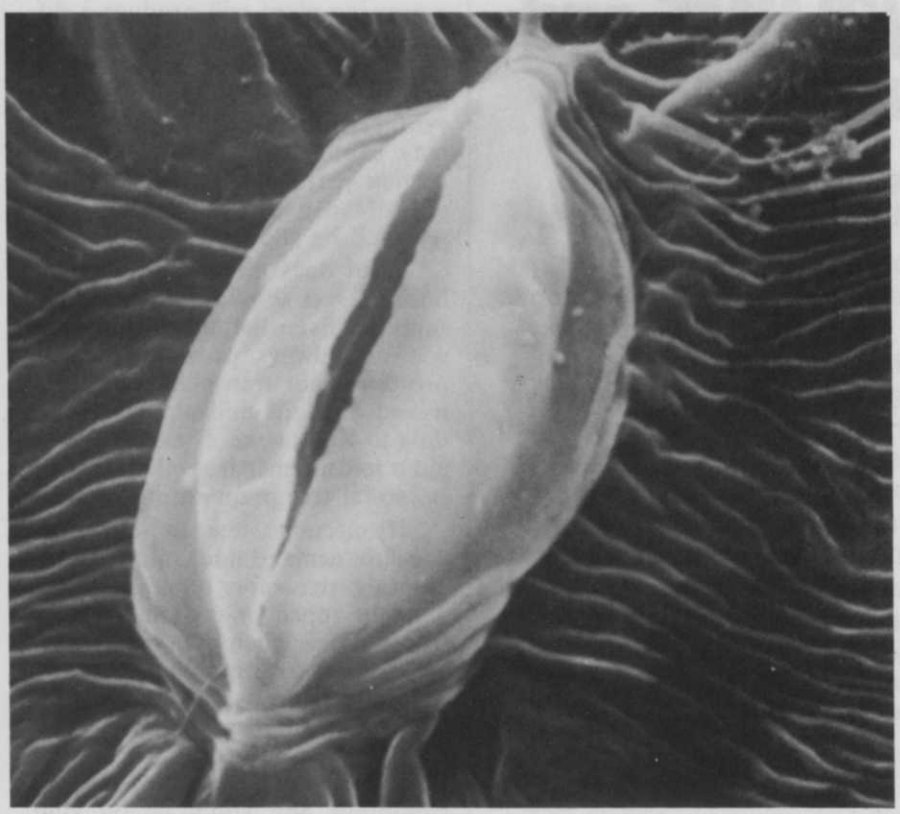
Toxicity varies depending on variables like type and brand of anti-transpirant, dosage, species, soil conditions and temperature at application time. Anti-transpirants may cause reduced photosynthesis, altered metabolism, leaf lesions, chlorosis and leaf browning and leaf fall and possible death.

Pines and sugar maples, for instance, cannot tolerate certain film-type anti-transpirants. The stomata are already partially filled with a or degrade. If sufficient numbers of stomata are blocked off, the tree dies. Kozlowski recommends "an anti-transpirant that isn't too efficient." In other words, an anti-transpirant that hinders but doesn't totally stop transpiration should be used.

All anti-transpirants do not have comparable results on all species. What works on broad-leaved species may prove to be detrimental to conifers. Again, each nurseryman should experiment with his own stock to find the best anti-transpirant for his region and needs.

Another limitation to film-type anti-transpirants is a decrease in efficiency at high temperatures because they tend to dry out and crack. Kozlowski's experiments showed "at high temperatures, very

(continued)



This photo shows the pore of an untreated ash leaf. The photo was taken with a scanning electron microscope (SEM).

This is a scanning electron microscope photo of an ash leaf pore treated with a film-type antitranspirant. The pore is closed and moisture loss during transplanting is minimized.

waxy substance that protects the interior of the leaf. This wax and the anti-transpirant can combine to form a plug that does not wash away different results can be obtained with a given anti-transpirant under varying environmental conditions, from a 50 percent decrease in transpiration to a 50 percent increase".

Wind may also effect anti-transpirant efficiency. In the field, high winds may disrupt the film and cause uneven spraying, resulting in leaf suffocation.

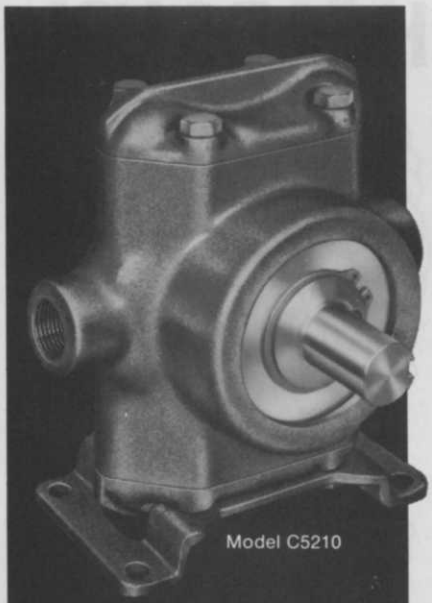
Metabolic anti-transpirants induce stomatal closure internally. The tested compounds had variable results ranging from outright toxicity to very satisfactory transpiration control. Kozlowski's research seems to indicate only one metabolic type, abscisic acid, was highly successful. However, this compound is not commercially available.

"Our studies underlined the difficulty of making specific recommendations for anti-transpirant use," Kozlowski said. "Compound and dosage, species and environmental variables are important in determining the physiological responses of anti-transpirant application."

"Anti-transpirant application to a growing plant will produce a different result than application to a plant that has completed its seasonal growth. Reduction of photosynthesis from anti-transpirants may cause death or influence the current year's growth or reserve accumulation for the following season," he added.

What does this mean to the arborist? Trees shouldn't be moved in summer. Even the anti-transpirants will not always provide adequate protection for transplanting broadleaved trees in midsummer according to Kozlowski. The only way to aid a midsummer transplant success is careful tree preparation.

If circumstance or customer pressure demand midsummer transplanting, remember to have a balled and burlapped or container grown tree to move. Then keep the number of branches to a minimum by pruning, be sure to use only light anti-transpirant applications and water to a depth of fifteen inches. After that hope for favorable growing conditions and you'll be on your way to reduced transplant losses.



For both VOLUME and PRESSURE

Use Hypro series 5200 Big Twin piston pumps.

Here's a rugged two-cylinder piston pump that will deliver up to 10 gpm at 400 psi (600 rpm) for tree spraying, area spraying, fogging, or termite pretreating.

Handles many kinds of weed and pest control chemicals including wettable powder suspensions.

Available with solid shaft or with hollow shaft for direct tractor, truck, or jeep PTO mounting.

FEATURES:

Leather or impregnated fabric piston cups.

Heavy duty ball bearings.

Suction & discharge ports tapped ¾" NPT.

Also available with 6 hp gas engine and mounting base. Model GC5210

Write for bulletin 154

Hypro / LSi

A division of Lear Siegler, Inc.

347 Fifth Avenue NW, St. Paul, Minnesota 55112

Circle 120 on free information card

Meeting Dates

Florida Turfgrass Conference and Show, Sheraton Towers, Orlando, Fla., Oct. 12-16.

Kentucky Turfgrass Council Conference and Field Day, Barren River State Resort Park, Lucas, Ky., Oct. 14-15.

Southern California Turfgrass Council, 15th annual turfgrass equipment and materials exposition, Orange County Fairgrounds, Costa Mesa, Calif., Oct. 22-23.

26th Central Plains Turfgrass Conference, Manhattan, Kan., Oct. 22-24.

Industrial Weed Conference, Rudder Center, Texas A & M University, College Station, Texas, Oct. 22-24.

Wisconsin Golf Turf Symposium, 10th annual, Pfister Hotel, Milwaukee, Wis., Oct. 29-30.

Sprinkler Irrigation Association, annual convention, Camelback Inn, Scotsdale, Ariz., Nov. 2-4.

National Insititute on Park and Grounds Maintenance, 5th annual educational conference, Chase Park Plaza Hotel, St. Louis, Mo., Nov. 3-6.

Better Trees for Metropolitan Landscape, U.S. National Arboretum, Washington, D.C., Nov. 4-6

Wisconsin Park and Recreation Association, annual conference, Scotsland Hotel and Resort, Oconomowoc, Wis., Nov. 5-7.

Midwest Grass Conference, Vladimir's Hall, Farmington Hills, Mich., Nov., 10-11.

Clemson University Turfgrass Conference, 9th annual, Clemson House, Clemson, S. Car., Nov., 11-12.

North Carolina Irrigation Society, 12th annual conference, North Carolina State University Faculty Club, Nov. 12-13.

Tidewater Shade Tree Conference, Norfolk Botanical Gardens, Norfolk, Va., Nov. 12.

Clemson University Turfgrass Conference, 9th Annual, Clemson House, Clemson, South Carolina, Nov. 11-12.

Colorado Crop Protection Institute, 5th annual meeting, Colorado State University Campus, Ft. Collins, Colorado, Nov. 12-13.

North Carolina Irrigation Society, 12th annual conference, North Carolina State University Faculty Club, Nov. 12-13.

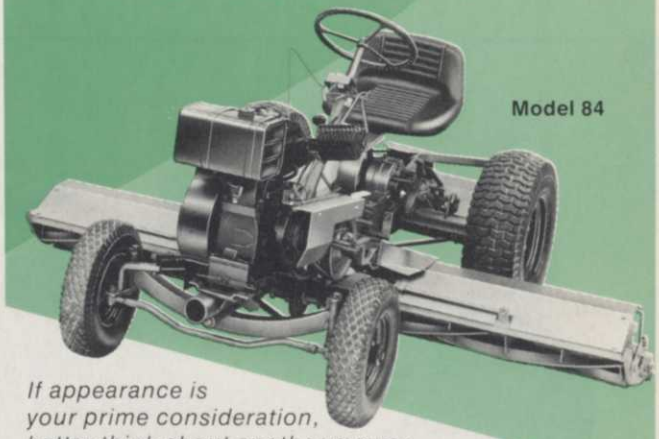
Grounds Maintenance Conference, Callaway Gardens, Georgia, Nov. 18-19.

New Jersey Turfgrass Expo '75, educational conference and trade show, Sheraton Poste Inn, Cherry Hill, N.J., Dec. 1-4.

Ohio Turfgrass Conference and Show, Cincinnati Convention-Exposition Center, Cincinnati, Ohio, Dec. 2-4.

National Agricultural Aviation Association, 9th annual conference, Las Vegas Hilton and Las Vegas Convention Center, Las Vegas, Nevada, Dec. 7-11.

Ugly, but Economical!



If appearance is your prime consideration, better think about another mower.

If economy and quality is what you want— you want a National Mower!

In today's economy, one of the most difficult engineering tasks is to produce a completely functional and easily maintainable machine with a minimum number of components. *We've been doing just that since 1919.*

In addition, we skimp on styling in order to lower initial price and to build mowers that give you years of extra service.

Rather than adding fancy shrouds, shiny hubcaps and frills, we concentrate on providing mowers with maneuverability and superb performance on banks and hillsides. For better quality, we use Timken bearings; automotive-type transmissions and heavy-duty, tubular steel frames. Reels adjust down to fixed bed bars providing for more rigid and longer lasting mowing units. Bed knives have turned up lips for extra wear...*a feature we introduced as early as 1925.* For professional results, National's three power-driven, free-floating reels follow ground contour and cut without skip or scalping.

Chrome accent strips don't add to serviceability, so we don't use them. National's no-nonsense design makes normal service faster than any mower on today's market.

Check out the economies of these ugly beauties... we've been adding nothing but quality since 1919.

WRITE for detailed literature on all National Mowers

NATIONAL Mower Company

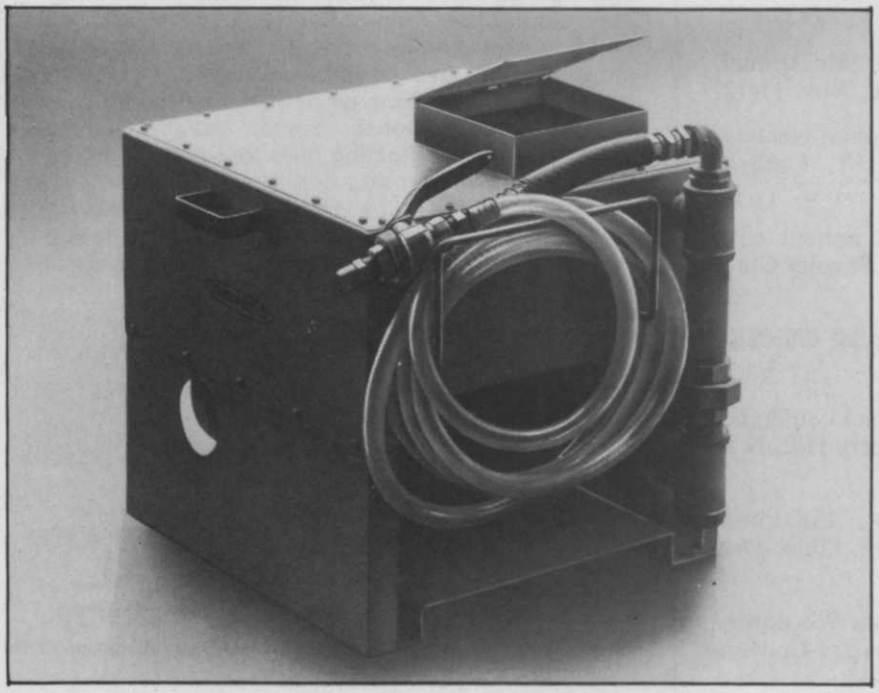
660 Raymond Avenue • St. Paul, Minnesota 55114
Phone: 612/646-4079

Circle 119 on free information card

New Products

MINOR: West Germany's Solo Kleinmotoren self-propelled mist blowers are now standard fitted with the company's single-nozzle "Teleblast" gun for 50 ft. reach, in addition to the earlier versions with standard radial 8-nozzle blower heads. This self-propelled riding and walking-type "Minor" mist blower models can be adapted for diesel operation at a moderate surcharge. The chief advantages of diesel power are fuel savings and prolonged engine life. Solo Minor -450 self-propelled features 40 gallon hi-concentrate tank, low pressure all-terrain tires and 37 in. track for operation in narrow spaces.

Circle 701 on free information card.



TREE WRAP: A new kind of wrapping introduced by 3M Co., helps protect young trees from gnawing animals and sunscald. The manufacturer claims it is breathable and stretchable and sticks to itself. It conforms to trunk irrtegularities and its elasticity also prevents gapping and binding to restrict growth. Its porous nature prevents pockets of moisture from forming next to the bark causing rotting and splitting.

Circle 702 on free information card.

WORLD'S SMALLEST: Reinco, Inc. introduces the new PP20L, the world's smallest hydrograsser, designed specifically for testing and evaluating purposes. The new miniature-sized hydrograsser has a 20 liter capacity and can be transported in the trunk of a car. It allows minimum coverage and added control when experimenting on a small scale with fertilizers, mulch slurries or binders, according to the manufacturer. The PP20L prevents waste and assures proper application rates.

Circle 703 on free information card.

People on the Move

Dr. John A. Budny, named associate director of toxicology for the Agricultural Chemicals Division of Diamond Shamrock. Budny will be responsible for providing information on and expertise in toxicology for determining product safety. He will also assist in registration of new products.

* * *

George W. Hamilton, joins Rhodia, Inc., Agricultural Division as market supervisor for non-crop, industrial and turf markets. Also, **Robert E. Cummins,** promoted to distribution and production planning manager in the Division's operations department.

* * *

Robert H. Wakefield, named vice president of marketing for Onan Division of Onan Corp. Wakefield spent most of his business career with Ford Motor Co., where he was most recently marketing manager of the Industrial Engine Division.

* * *

William H. Culpepper, Jr., transfers within Elanco Products Co., to manager, market planning responsible for Surflan, Paarlan, and Balan. He joined Elanco in 1967 and has held positions as a sales representative and marketing associate. In other company moves, **Nolen P. Cox,** promoted to an agricultural chemicals district sales manager. He will manage the Indianapolis sales district. **Dennis H. Lade, Ph.D.,** promoted to manager market planning responsible for new products in the agricultural chemicals marketing planning division.

* * *

Harold Vandiver, moves up to regional manager of the Southwest Region of Thompson-Hayward Chemical Co. He will be responsible for the marketing efforts of each of the eight distribution centers located in this region.

* * *

Dr. Ronald Wiegand, named director of research and development for the Agricultural and Veterinary Products Division of Abbott Laboratories. He was formerly director, product planning and development. **Dr. Mark G. Wiltse,** joins the Division as manager, agricultural chemical field development. Wiltse will be responsible for field development and technical support to marketing and sales.

* * *

Edward T. Rhodes, named deputy assistant administrator for administration for EPA. Rhodes comes from the Department of Health, Education and Welfare.

* * *

L. "Phil" Maxwell, promoted to sales coordinator for Walbro Corp., Carburetor Division. **John W. Underwood,** appointed managing director of Walbro's West Germany operation.

Don't settle for less than . . .

Warren's® A-20

KENTUCKY BLUEGRASS
SOD AND SOD PLUGS

A-20 is rated first in disease resistance and recovers fast from injury because of its vigorous rhizome growth. A-20 will do well in up to 50% shade.

Warren's® A-34

KENTUCKY BLUEGRASS
SOD, SOD PLUGS & SEED

A-34 should be considered where shade is a problem together with areas of full sunlight. A-34 will thrive in up to 65% shade and grows vigorously in full sunlight.

A-20 AND A-34 ARE PERFORMANCE PROVEN FROM COAST TO COAST

University ratings on A-20 and A-34, descriptive literature, prominent job site list and nursery locations are available upon request.

WARREN'S LAWN FOOD

We sincerely recommend you use Warren's Lawn Food. It is the same lawn food used to produce Warren's highly rated grasses.

Warren's
TURF NURSERY
INCORPORATED
8400 West 111th Street
Palos Park, Illinois 60409
Phone: 312/974-3000

Warren's
NURSERIES
Located Near
CHICAGO
NEW YORK
INDIANAPOLIS
CLEVELAND
AKRON
COLUMBUS
MILWAUKEE
SAN FRANCISCO

Warren's
ASSOCIATE GROWERS

WASH., D.C. — BALTIMORE
Princeton Turf Farms
Route 3, Box 105A
Centreville, Md. 21617
(301) 827-8454

PHILADELPHIA
Princeton Turf Farms, Inc.
P.O. Box 245, Old York Road
Hightstown, N.J. 08520
(609) 448-9300

LONG ISLAND
De Lalio Sod Farms, Inc.
652 Deer Park Avenue
Dix Hills, New York 11746
(516) CH 9-6616

WICHITA
M. Meyer & Son Nursery
5439 S. Hydraulic
Wichita, Kansas 67216
(316) 524-3413

KANSAS CITY
Princeton Turf of Kansas City
(Latta-Scholes, Inc.)
Box 9268 - Riverside Station
Kansas City, Mo. 64168
(816) 741-4800

BUFFALO
Country Side Turf
7229 Plank Road
Lockport, N.Y. 14094
(716) 434-5338

PROVIDENCE
Kingston Turf Farms
Dugway Bridge Road
West Kingston, R.I. 02892
(401) 789-0630

BOISE
Cloverdale Nursery
2528 N. Cloverdale Rd.
Boise, Idaho 83704
(208) 375-5262

MINNEAPOLIS — ST. PAUL
Green-Way Turf Nursery
939 Washington
Anoka, Minn. 55303
(612) 427-4210

OSHKOSH
Hamman Brothers
8406 Hollander Lane
Pickett, Wisc. 54964
(414) 589-3681

OMAHA
Long Creek Nursery
5910 N. 52nd Street
Omaha, Nebraska 68104
(402) 453-9586

ENGLAND
(Distributor A-34 Seed)
Hurst Gunson Cooper Taber Ltd.
Witham, Essex
Phone: Witham 3451

Eastern Cultivated Turf Farms Ltd.
Cranley Nursery, Cranley Gardens
Muswell Hill
London, N10 3AR
(01) 883-5880

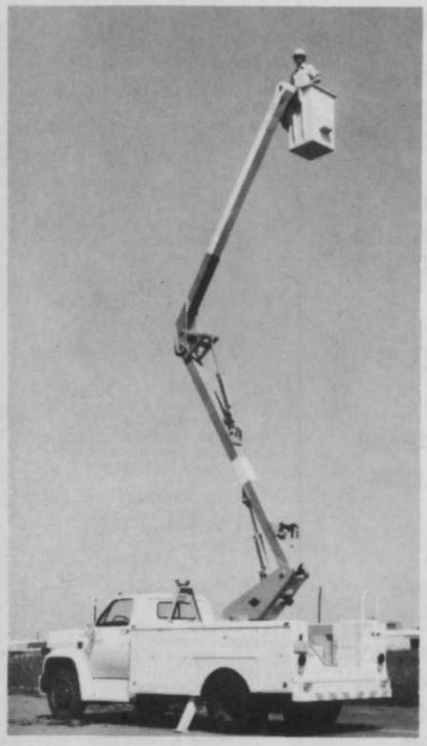
SCOTLAND
Meldrum Nurseries
Montrose Road, Silverwells
Arbroath, Angus, Scotland
Phone: Arbroath 2286

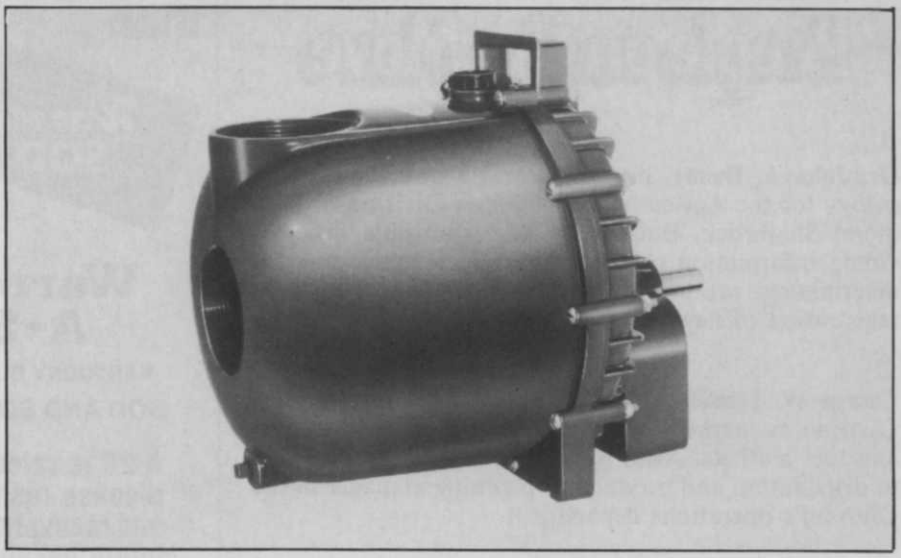
FRANCE
R. F. Besnard
1, Rue Bellanger
92200 Neuilly Sur-Seine
(A Suburb of Paris)
(010) 624-3403

Circle 131 on free information card

VERSALIFT: Time Manufacturing Co., says this unit has a bucket capacity of 350 lbs. and is positive leveled. It is available in hights of 32 ft. and 36 ft. Full hydraulic controls are provided as well as hydraulic tool power in the bucket. Primarily hydraulic power is provided by a PTO-driven pump or DC motor pump. Engine start-stop from the bucket is standard on PTO models and is complimented by an automatic throttle control system.

Circle 705 on free information card.





BIG-FLOW: Molded from glass reinforced thermoplastic polyester resin, this pump is highly resistant to many chemicals, according to Metra Corp. The self-priming centrifugal pump is easy to disassemble and wetted parts are reinforced polyester, stainless steel, Buna-N, EPDM and Viton. The manufacturer claims the pump will deliver up to 14,000 gph with suction lift up to 25 ft. A built in check-valve eliminates backflow when shut off. The unit is recommended for mounting with electric motors up to 3450 rpm and 74 hp. A universal metal base is also available.

Circle 704 on free information card.

SNOZZLE: Eagle Manufacturing Co., introduces a new special nozzle for their "M" series gasser cans and "A" series all-purpose galvanized filler cans. Manufacturer says the snozzle makes for easier pouring because of their unique flat nose or pouring rest.

Circle 706 on free information card.

AERIAL LIFT: Teco Inc. has a new personnel lifting platform called Vanguard. According to company officials, the Vanguard is designed for safety, easy maintenance and versatility. The new unit is less complicated and contains more efficient components, eliminating the need for sprockets, chains, cables, fiberglass insulator rods and sheaves used in lifting the upper boom, says the manufacturer. Minimizing the number of hidden components, general maintenance and routine safety checks are simplified.

Circle 707 on free information card.

LAPPING COMPOUND: A new gel base reel lapping compound from Hertron Chemical Co. The chemical properities of this compound cause it to cling to the reel blade, reducing walk-off and saving up to 90 percent of grit waste, says Hertron. It is a premixed compound which contains 20-40 percent more grit by weight than any other pre-mixed lapping compound, claims the manufacturer. The gel base keeps the grit in permanent suspension and rinses clean with the use of regular water tap pressure.

Circle 708 on free information card.

ATTACHMENT: Two heavy-duty offset trencher attachments are available from Vermeer Manufacturing Co. The new units are designed for close-in trenching and for installations along narrow-shouldered roadways, says the manufacturer. Both feature dual auger spoil control, digging depths fro 0-72 in., widths up to 14 in. and a choice of digging chains — 70,-000 lb. test and 150,000 lb.test. One model, a permanently mounted unit, can be shifted laterally for digging not only to the edge of the right wheel, but also in the center on the machine like a conventional trencher. The other unit is interchangeable with additional dirt handling attachments, including a conventional trencher, rock cutter wheel, vibratory plow, etc.

Circle 710 on free information card.

BOMBI: This new multi-terrain personnel carrier, smallest industrial tracked vehicle made by Bombardier Limited, has an enclosed steel cab designed to meet OSHA roll-over protective standards. The three-man carrier can be used in snow, swampland, and other off-road areas,

Circle 711 on free information card.

Y FILTER: The Y filter was designed by Drip Irrigation Corp. for the head of each drip line on large scale installation, but the manufacturers claim it has dozens of other uses. The Y filter, ¾ in. and 1 in. width hose inlet, is ideal for up to 25 gpm irrigation lines. Constructed of polypropylene, the unit has 120 mesh stainless steel screen that's removable for cleaning. There are no moving parts and it serves as a "fuse" for existing irrigation lines for conversion to drip irrigation by screening out scale and deposits that could cause stagnation in flow.

Circle 712 on free information card.

MULCHER: This new trailer-mounted power mulcher from Reinco, is said to be capable of spreading 4 tons of straw mulch per hour up to distances of 60 ft. As each job is completed, the machine can be unhitched so that there is no truck tie-up. The trailer construction permits added mobility and maximum access over rough terrain. Reinco's patented "straight-through" drive principle allows full engine horsepower output to be available for breaking and placing mulch. Less maintenance and easier operation in addition to an optional asphalt emulsion system makes the TM7-30(X) a versatile, high velocity mulcher for landscape contractors, nurserymen-landscapers and municipal road departments, according to the manufacturer.

Circle 709 on free information card.

WORK HORSE: Fits large frame Bolens tractors. ARPS Corp., manufacturer of the unit, says it features reinforced welded tubular frame, automotive quality gear box with heat-treated cut steel gears, heavy-duty ball and roller bearings and shear-bolt protection.

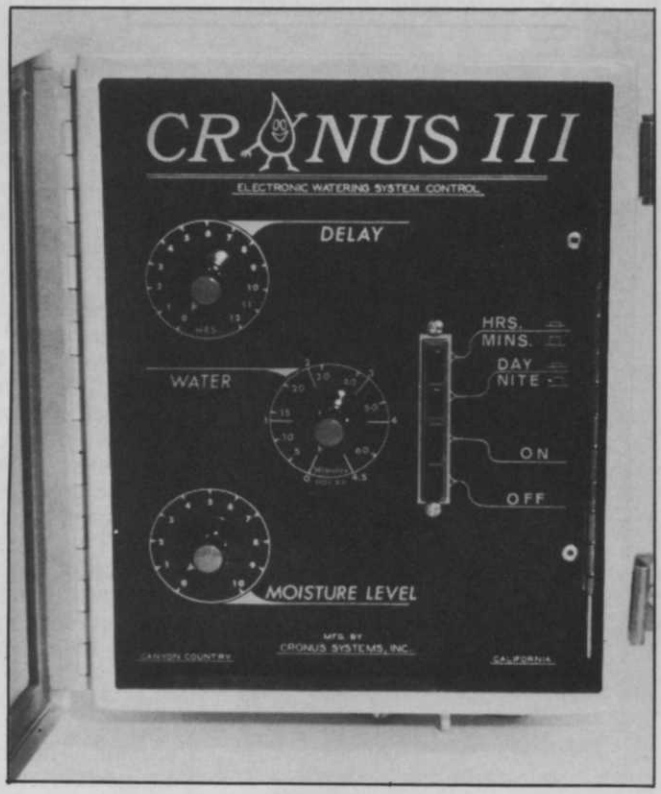
Circle 713 on free information card.

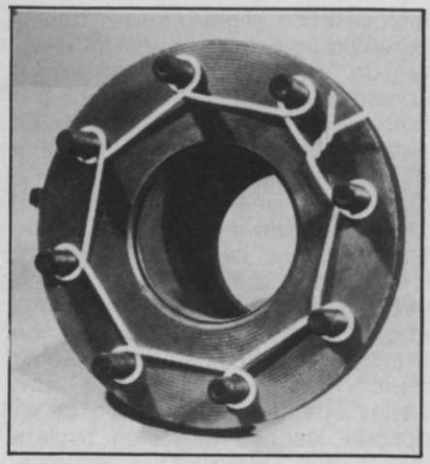
DRILL PROOF: Weil Service Products Corp., introduces a new maximum security pad-lock. The "Drill-Buster" utilizes a special 8-pin cylinder requiring burglar alarm type tubular keys. A hardened steel 2 in. chrome-plated case is combined with a double locking hardened steel shackle.

Circle 715 on free information card.

CRONUS III: Watering control, claims Cronus Systems, Inc., is the only system that can control 10 valves ranging in size from ¼ in. to 10 in for one full year on 2 low cost dry cell batteries. Other features include: Moisture sensing which eliminates unnecessary watering; day or night operation; photocell control — provides settings to operate up to 12 hours after either sunrise or sunset; no mechanical clock; plug-in electronic printed circuit board for easy maintenance; all controls are mounted on the front panel and are knob or push button settings.

Circle 714 on free information card.



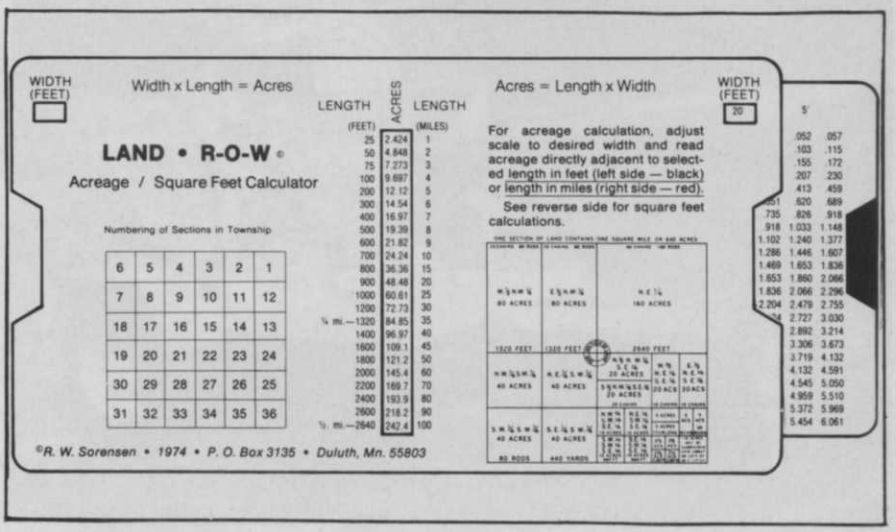


GASKET: Weil Products claims this material is a quick way to create any gasket or pack any valve — economically and with no inventory of ready-made gaskets or packings.

Circle 716 on free information card.

CALCULATOR: Land Row says this unit is a handy, easy-to-use slide rule type calculator for speedily converting linear measurements to acres or square ft. The unit is 3½ in. wide and 6½ in. long. Acreage calculations are simply made by adjusting the scale to desired width in feet and reading appropriate acreage adjacent to selected length in either feet or miles.

Circle 717 on free information card.



Swing-shift!

Equip your 3-point hitch tractor with a new Ford rear blade. Ten to choose from. Great way to match your job needs, your tractor power, and your budget.

Swing offset adjustment is standard on most models, making it easy to offset blades right or left of center. Steel moldboards are specially formed to roll the load. Cutting edges with highway standard hole spacing can be replaced.

Blades can be angled, tilted, and reversed 180-degrees, adapt to many grading, leveling, landscaping, ditching, terracing and backfilling operations.

Ten new Ford rear blades. 6 to 10-foot widths. Now at your Ford Tractor dealership. He's listed in the Yellow Pages under "Tractor Dealers" or "Contractors' Equipment & Supplies". See him for information on how to buy, rent or finance.

Landscape, build lawns, maintain beaches and roadways, clean up with new Ford Landscape Rakes. Economy and swing offset models. 6 and 8-foot widths. Optional attachments for special needs.

FORD TRACTORS

Ford

Circle 121 on free information card

Classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: All classifications 50¢ per word. Box number, $1. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment.

FOR SALE

GRASS SOD: Meyer Z-52, Emerald and Matrella Zoysia-Tufcote Bermuda-Centepide 50 to 199 yards at $1.70 per yard — 200 yards and up @ $1.30 per yard. Ask for quotes on large quantities. Cartwright Nursery Company, Collierville, Tennessee 38017. Phone 901 853-2352.

FOR SALE — A going tree surgery business carrying 4 to 6 men. Financing made easy if needed. Call for appointment for or write P.O. Box 1685, Plainville, Mass. 02762. Phone 617 695-5461

FOR SALE: Over 800 evergreen hicks. 24" to 4' high. May leave on lot one year. Sycamore Tree Service, Box 74, Sycamore, Ohio 44882. Phone 419 927-9752.

LAWN MAINTENANCE and spraying company in Orlando, Florida. $55,000 — write Steve Bilko, 2716 Kingfisher Drive, Orlando, Florida 32806.

USED EQUIPMENT

1971 SERVI-LIFT with elevator 52' working height mounted on GMC truck with 8000 miles, 1972 Vermeer stump grinder model 1560, 1972 Asplund 16" V-8 brush chipper. Call 203 666-0661.

LOG CHIPPER, Vermeer 1971 650 hours, like new, make offer. Bob Calloway, c/o Western Motel, 715 Wilbarger, Vernon, Texas 76384. Phone 817 552-2531.

FOR SALE: 2 used aerial baskets — 50 ft. working height, 2 Asplundh brush chippers. Bean sprayer, 35 G.P.M. Vermeer stump cutter 1560. Parkway Tree Service, Milwaukee, Wisconsin. Phone 414 257-1555.

VERMEER TREE SPADE TS-30 TS-44T, and TS-66T. Bowie Hydro-mulcher 500 gallon, trailer model. Call for complete details. Phone 817 461-9209.

SEEDS

SOD QUALITY Seeds Merion, Fylking, Delta, Park, Newport, Nugget, Adelphi, wcheri, Glade and Baron bluegrasses also fine fescues. Manhattan rye grass. Custom mixing available. Michigan State Seed Co., Grand Ledge, Michigan 48837. Phone 517 627-2164.

HELP WANTED

DISTRIBUTORS for D. J. Andrews, Inc. stump cutter teeth, pockets and bolts. Best wholesale and retail price in U.S.A. Add to this exclusive area, local advertising at our expense, etc., and you have our story. D. J. Andrews, Inc., 17 Silver St., Rochester, N.Y. 14611. Call 716 235-1230, or 716 436-1515.

TREE EXPERT SUPERINTENDENT. To work with and supervise tree work. Washington D.C. area. We pay highest wages in area. Send resume of experience and salary requirements. Box 135, Weeds, Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

WANTED: Assistant Superintendent, 18 hole private club, manual watering system, 12 months a year. Send resume — 2955 Packard Rd., c/o Mr. John Ruggiero, Ypsilanti, Michigan 48197.

POSITION WANTED

HORTICULTURIST: Seeking managerial or sales position, experience varied. Reply Box 136, Weeds, Trees & Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

MISCELLANEOUS

EQUIPMENT SERVICE AND PARTS — New England and New York State. Authorized servicing of aerial lifts and chippers by factory trained personnel. Specializing in Asplundh and Skyworker. Two convenient locations plus complete road service. Service contracts available. Call C.U.E.S., Inc., 603 889-4071 or 203 634-3146.

NOTICES

MIDWEST *GRASS* CONFERENCE
November 10th & 11th. 9 A.M. to 5 P.M.

Vladimir's Hall, 28125 Grand River Ave., Farmington Hills, Michigan 48024.

Featured Speakers: Dr. K. T. Payne, Michigan State University, Dr. John Harper II, The Pennsylvania State University, Dr. Joseph Duich, The Pennsylvania State University, Dr. Dave Martin, Ohio State University, Dr. Alfred Turgeon, The University of Illinois.

Registration Fee $25.00 (includes two buffet lunches). Make check or money order payable to Lawn Sprayers Association of Michigan. Mail to 22663 Middlebelt Rd., Farmington Hills, Michigan 48024.

Advertisers

Austin Products, Inc. 13
Bunton Company 8
CareTree Systems 29
Creative Sales, Inc. 12
Delta Earth, Inc. 35
E. I. duPont de Nemours & Co., Inc. 50
Ford Tractor & Implement Operations 47
Gordon Corp./P.B.I. 18-19
Hill's Nursery 8
Hypro, Inc. 40
International Harvester 17
International Spike, Inc. 15
Jacobsen Mfg. Co. ..... 3rd cover
Kay-Fries Chemical Co. 23
Kohler Company 3
Lifetime Career Schools 37
Lindig Mfg. Co. 26
Lofts Pedigreed Seed Co. ..... 4th cover
Magline, Inc. 5
National Mower Co. 41
Pennfine Perennial Ryegrass .....2nd cover
Perlite Institute 16
Princeton Mfg. Co. 27
Stihl American, Inc. 9
Swift Chemical Co. 6-7
Thompson-Hayward Chemical Co. 21
The Toro Company 37
Vermeer Mfg. Co. 37
Vicon 38
Warren's Turf Nursery 43
Willamette Seed & Grain Co. 33

H. Barley Morley, president of Stauffer Chemical Company, (right) and Norishige Hasegawa, president of Sumitomo Chemical Co., Ltd., sign a joint venture agreement at Stauffer's Westport, Conn. headquarters, establishing Mount Pleasant Chemical Company. The new company will build a multi-million dollar plant to produce Sumithion insecticide. Based on Sumitomo technology and supplied with raw materials and operated by Stauffer, the plant is scheduled for completion in early 1977.

Trimmings

Controlled-release pesticide concept applies to such things as disease-carrying snails, aquatic weeds, crop-attacking insects and other pests may be on its way to becoming the most popular method of pest control. How the controlled-release pesticide movement developed, where it stands now, and what can be expected of it in the future are discussed in a new book written by Nate Cardarelli, associate professor of general technology at the University of Akron, Akron, Ohio. Cardarelli wrote the book at the request of Dr. Guntar Zweig of the Federal EPA.

"Controlled-release offers a heck of a lot of promise to control pests with much less environmental contamination than conventional pest control methods, which rely on massive dosing of the environment with consequent destruction of plant and animal life and general contamination of soil, air and water," Cardarelli said.

In the book, "Controlled Release Pesticides Formulation," such topics as antifouling materials, snail control, ansd various plant, insect, and rodent killers and controls are discussed.

Aquatic herbicides involve control of such plants as water hyacinth and alligator weeds, which foul up water and hamper passage by water craft. To continually cut the plants, he explains, means that they are free to float and take root elsewhere. Controlled release pesticides can attack this problem without harming other aquatic life. The book is scheduled for release in November.

More of our nation's 22 million senior citizens are turning to golf as the ideal sport and leisure-time activity. Several major cities throughout the U.S. have developed senior golf play activities on their municipal courses. The Milwaukee County Park Commission reports that during 1974, senior golf play accounted for 18.1 percent of the total rounds played on its 14 municipal courses. Tucson reports that 15.8 percent on the total play on its three municipal courses was played by the age 62-and-over crowd.

National Golf Foundation reports that there is every indication that senior golf play will increase materially in the next quarter century. It is estimated that there will be a population increase of 30 percent in the age 65-and-over group by the year 2000.

"Senior Citizens and Golf", a 24-page booklet published by the Foundation contains a history of and details on several successful senior golf programs along with forms used in initiating and implementing such projects. For a copy ($1.00 post-paid) write NGF, Room 707 Merchandise Mart, Chicago, ILL 60654.

USDA reports a first sighting of gall wasp in the U.S. The wasp, an oriental import, primarily attacks Chinese chestnut trees. The present outbreak involves chestnut groves in Bryon and Fort Valley, GA. The wasp is very small, about ⅛ inch long, black, with clear wings. The larva are only slightly smaller than the adults and resemble maggots. Other then the insect itself, the chief sign of the wasp's presence are "galls", or small brown knobs on the end of chestnut twigs. The agency reports that gall wasps are responsible for significant reductions in chestnut yields in Korea and Japan. Several control methods are available to growers if this new insect invader proves to be a serious pest in the U.S.

"Lawn Mower Safety", a 9½ minute film released by International Harvester, is designed to alert the viewer to the fact that safe operation of a rotary mower requires certain common-sense precautions on the part of the operator. It's not a "rule" film. Its intent is to make the viewer want to read and heed the company's manual and the safety in a series of Super 8 Cinema safety films for use by dealers in educating their customers.

Other media material from International includes a new brochure featuring the company's complete line of snow removal equipment. The six-page brochure describes snow blowers, snow throwers as well as front blades. Copies are available from local International dealers or upon request from: Advertising Department, International Harvester, 401 N. Michigan Ave., Chicago, Ill. 60611.

National Golf Foundation is sponsoring two national daily fee golf course management workshops. NGF's first workshop will focus on the critical problems of operating a for-profit golf business, including: competing with low-fee municipal golf; lobbying for property tax and zoning equity; building better public and press relations; solving people problems; improving course maintenance within a budget; and attracting and properly educating new golfers. The Eastern workshop is scheduled for November 10-12, 1975 at Marriot Inn, Cleveland, Ohio and the Western workshop for Novemzer 17-19, 1975 at Hyatt House, Burlingame, California.

National survey figures recently released by the Golf Course Superintendents Association of America (GCSAA), intended to provide its membership general guidelines, also prove to be of interest to the comparison minded golfing public.

Knowing full well before they began that the "average golf course" does not exist, GCSAA's survey now reports some interesting points for golfers and non-golfers alike to ponder.

The mythical "average course" will be an 18-hole private course with more than 400 members. It will be open ten months of the year during which time 37,340 rounds of golf will be played.

The golf course superintendent will manage 168 acres with bluegrass fairways averaging 2.9 acres each, bluegrass tees of 2,460 square feet and bentgrass greens of 5,914 square feet.

To keep this area in the condition desired by his membership, the superintendent's annual operating budget will be $109,501. This annual total includes items such as a $7,964 investment in capital equipment, $59,301 for labor (excluding the superintendent's salary), $5,068 for fertilizer, $4,298 for pesticides, $4,-810 for equipment repair and $1,767 for seed.

A comparison of these recent survey results with those of a similar survey made in 1971 reveals a 19.7 percent increase in overall operating budgets while the actual maintained acreage of golf courses decreased 3.85 percent.

It's fall.

For effective control of gray snow mold, use TERSAN® SP.

TURF FUNGICIDE

The trees turn color. But not your turf. It stays green.

To keep your course looking the way you want it, continue to follow the Du Pont TERSAN® 1-2-3 Disease Control Program.

To prevent gray snow mold, apply TERSAN SP. Should gray and pink snow mold be a problem, use a combination of TERSAN SP and TERSAN 1991. If pythium is a problem at overseeding, use TERSAN SP.

For effective year-round turf-disease control, the TERSAN 1-2-3 Program is the answer. It's effective, economical and a labor-saver.

Contact your golf course supplier for details today.

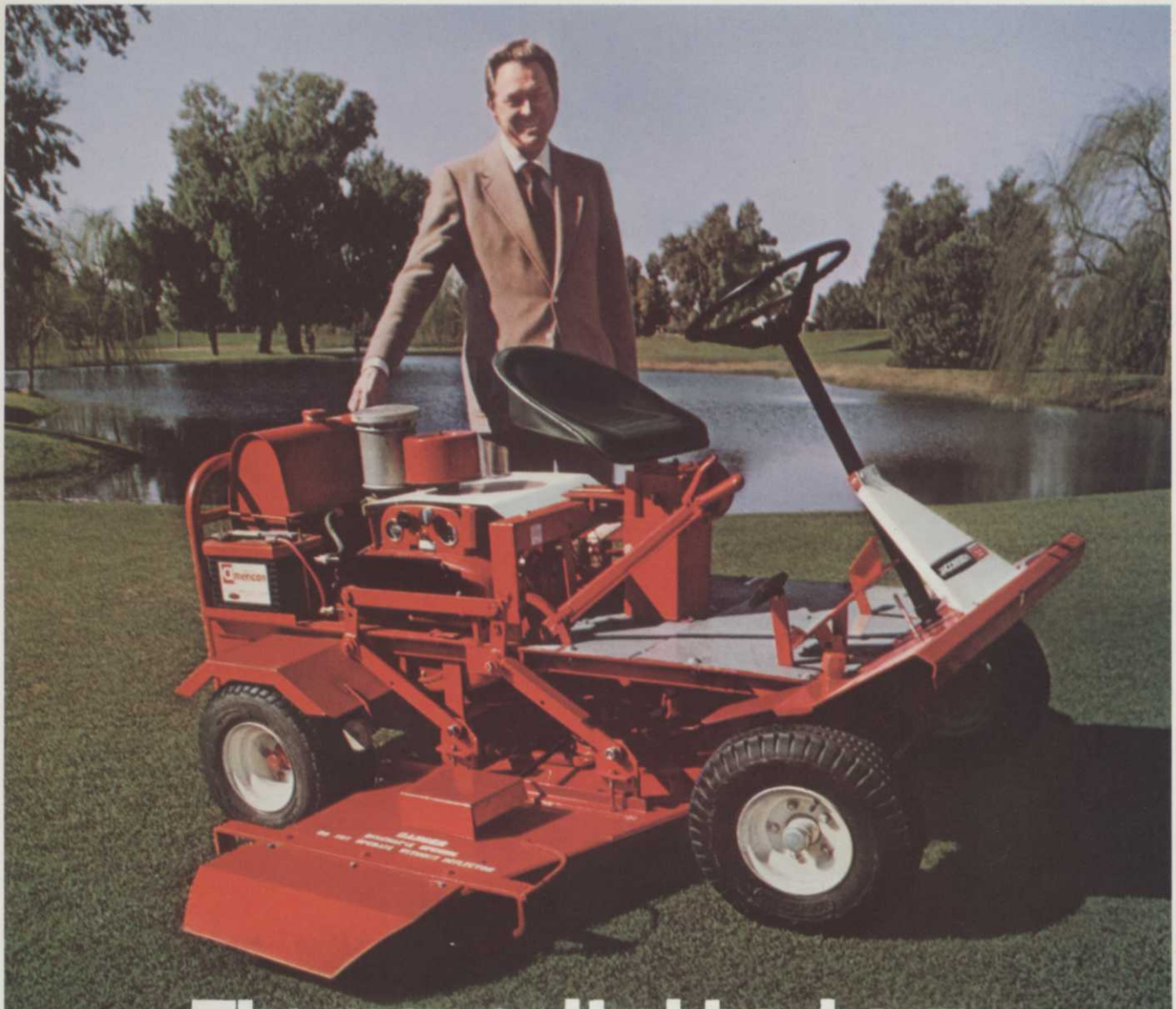
TERSAN 1•2•3
DISEASE CONTROL PROGRAM

DU PONT

REG. U.S. PAT. OFF.

With any chemical, follow labeling instructions and warnings carefully.

Circle 123 on free information card



The mower that beat our Commercial 60. Our new Jacobsen Commercial 72.

Bob Johnson of Illinois Lawn Equipment Company, Orland Park, Illinois, didn't think anything could outperform the Jacobsen Commercial 60.

Then he saw the new Commercial 72. It does everything the other mower does. But the Commercial 72 does it faster. Because it cuts a superwide 72-inch swath.

A heftier 19.8 horsepower engine gives the Commercial 72 all it needs to sail through rough turf. Or the fine-finish areas.

And all that power means the Commercial 72 can also mulch leaves. Or plow moderate amounts of snow with the optional blade.

But rugged as it is, this little brute handles easily. A low center of gravity gives built-in stability. And hydrostatic transmission means the operator simply pushes a pedal with his toe to go forward. Or with his heel to back up.

The operator won't waste time with frequent fueling stops either. The gas tank has a big 10-gallon capacity.

The good old reliable Commercial 60 is fast.

The good new reliable Commercial 72 is even faster.

All of us Jacobsen Distributors are ready now to show you how it gets more done in less time.

Your Jacobsen Distributors.

Before we sell it, we buy it.

For the name of the distributor near you write: Jacobsen Turf Distributor Directory, 1721 Packard Avenue, Racine, Wisconsin 53403.

"Since 1971, every pound of bluegrass mixture we use at Merion Golf Club contains 75% baron Kentucky Bluegrass."

U.S. Plant Patent #3186 Dwarf Variety

Richard Valentine, Golf Course Superintendent at Merion Golf Club has some interesting ideas about turf management. Here are some experiences he has shared with us.

"I don't believe in heavy feeding, and that seems to suit Baron just fine. I never use more than three pounds of nitrogen per 1000 square feet per annum. Baron doesn't seem to need those high nitrogen applications that some people are using on bluegrass. And, less fertilizer means less fungus and thatch. . .I like that."

"We have a tradition to uphold here at Merion and, by golly I'm going to make sure we use nothing but the best. Baron Kentucky Bluegrass belongs here at Merion."

"I used to have much more thatch before I started using Baron. And it comes up fast too. I cut-in Baron and it germinates in 10 days . . . one half the normal time." Rich discusses Baron's quick growth with Peter Loft and Andy Sweeney, local supplier.

"Merion has lots of hillsides and slopes . . . here's where Baron really stands out. We use a Jacobsen Seeder and cut seed into the soil. You have to plant grass seed . . . you can't just throw it on the ground. The only place I don't use Baron is on the tees and greens, which are bentgrass."

Richard Valentine, Golf Course Superintendent at Merion Golf Club, Ardmore, Pa. is the second superintendent in Merion's famous 79-year history, succeeding his father, Joseph, who held the position for 54 years.

"We cut our fairways to one inch all year long. During our regular Fall renovation program on approaches and drive areas, we use a mixture of five bluegrasses . . . 75% of that mixture has been Baron. We'll use the same mixture next Fall."

"I've used Baron for four years on all my fairways and up to this date I haven't had one case of helminthosporium. Baron stays greener during the cold months and brightens up fast in the Spring."

Exclusive North American Grower and Distributor:

LOFTS

Lofts Pedigreed Seed, Inc.

Bound Brook, N.J. 08805/(201) 356-8700

Lofts/New England
20 Beck Road
Arlington, Mass. 02174
Call collect (617) 648-7550

Loft Kellogg Seed Co.
322 E. Florida St.
Milwaukee, Wis. 53201
Call collect (414) 276-0373

Great Western Seed Co.
P.O. Box 387
Albany, Oregon 97321
Call collect (503) 926-2636

Circle 113 on free information card